Final Report for

Idaho Transportation Department

U.S. Highway 89 Corridor Plan

Existing and Future Conditions Report

Prepared by

DKS Associates

TRANSPORTATION SOLUTIONS

in association with

Winterbrook Planning

June 2003

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I. Introduction

The objective of the US Highway Corridor Study is the development of a comprehensive, long-range plan document that will serve to guide corridor management and project programming in the Statewide Transportation Improvement Program over the next 20 to 25 years. The study is organized according to the following major tasks:

I. Identification of Existing Transportation, Land Use, and Environmental Conditions
II. Identification of Future Transportation and Land Use Conditions
III. Establishment of Corridor Goals and Objectives
IV. Development of Management Strategy and Improvement Options
V. Identification of Recommended Management Strategies and Improvements
VI. Preparation of Corridor Plan Document

This report describes the methods and findings of Tasks I. and II.

As shown in Figure 1, the study area is comprised of the 27-mile segment of US 89 between the Idaho-Utah state line and east city limit of Montpelier. The largest activity centers along the corridor are the city of Montpelier and, in the summer months, the Fish Haven area. Other activity centers are the rural communities of St. Charles, Bloomington, and Paris. US 89 provides connections to Utah to the south and Wyoming to the north, as well as the major intersecting roads of State Highway 36 in Ovid and US 30 in Montpelier. Due to the rural character of the study area, there is no transit service. Bicycle and pedestrian facilities are limited, with a multi-use trail extending from just north of the Idaho-Utah state line into Utah and sidewalks adjacent to US 89 in Paris and Montpelier. Other modes within or nearby the study area include a Union Pacific rail line, a public and a private airport, two high-power transmission lines, and the navigable waterway of Bear Lake.

Task I. involved the preparation of inventories of existing transportation, land use, and environmental characteristics within the study area. The transportation inventory data was used to analyze existing transportation deficiencies for the various modes. Existing (reported) transportation deficiencies were also identified through a series of stakeholder interviews, an ITD Management Team meeting, a joint Technical Advisory Committee and Task Force meeting, and a public open house.

Also as a part of Task I., a review of local transportation and land use plans that may affect the corridor was conducted. The *Bear Lake County Transportation Plan* was

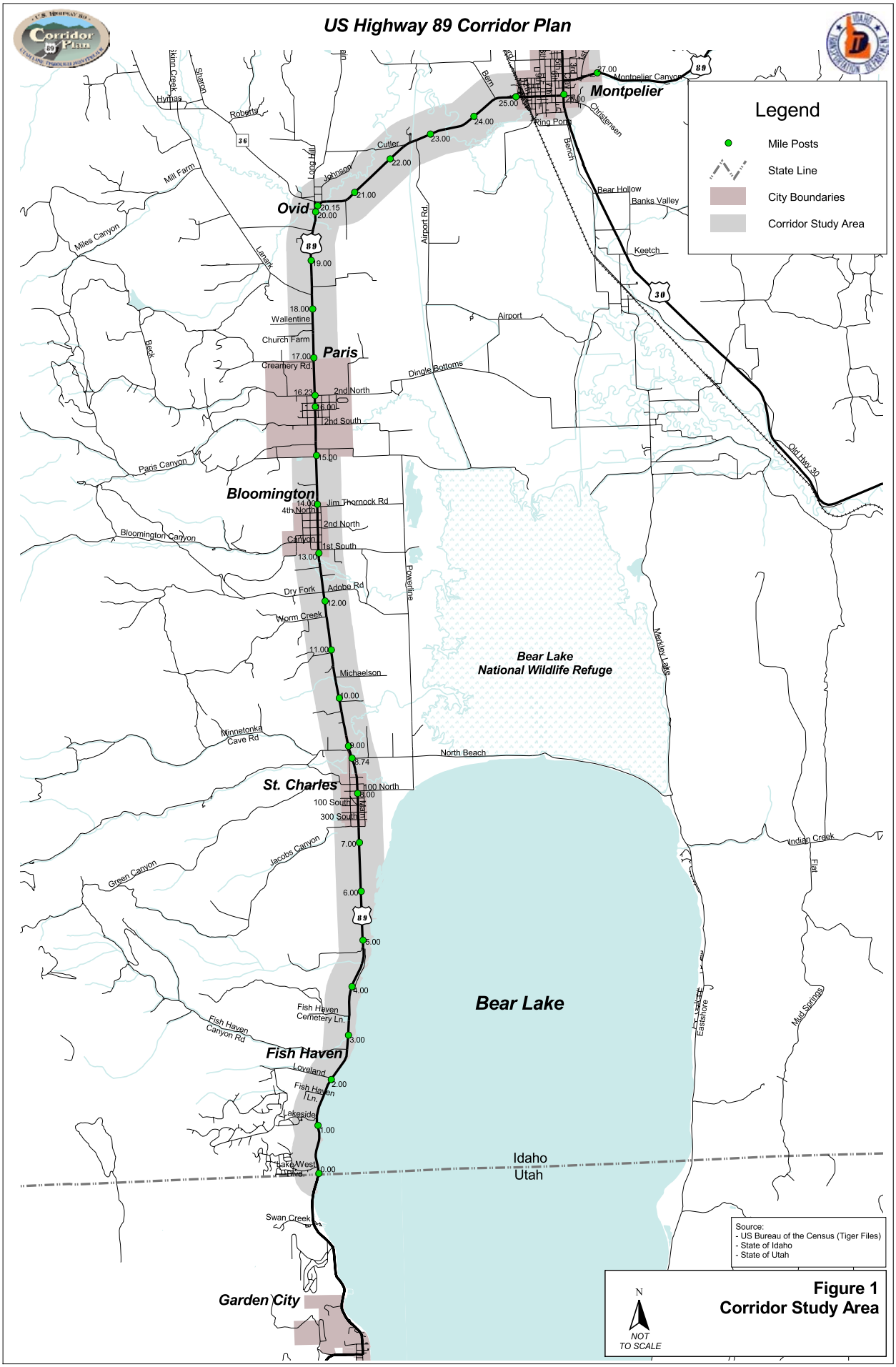


Figure 1
Corridor Study Area

recently completed in January 2003.[1] The focus of the plan is on maintenance of the existing county roadway system, as stated in the plan: "Ensuring adequate funding for the maintenance of the existing system is fundamental to future planning for the transportation system. The plan's goals and objectives establish a priority for roadway surface maintenance, as contrasted with improvement or expansion of the roadway network". As such, there are no provisions for county facilities within the plan that would affect future operations along the corridor. The comprehensive plans for Bear Lake County and the cities of St. Charles, Bloomington, Paris, and Montpelier were also reviewed. The findings of the review are discussed within the Land Use section of this report.

In Task II., future transportation and land use conditions were identified for the year 2025. A land use forecast for the study area was performed which served as the basis for the development of long-range travel forecasts. The travel forecasts were used to estimate future transportation deficiencies, using the same analysis procedures followed in Task I. for existing conditions.

The information on existing and future conditions developed in Tasks I. and II. will be used in subsequent study tasks to establish corridor goals and objectives, identify management strategy and improvement options to address the deficiencies, and select a recommended set of management strategies and improvements.

Part I. of this report is divided into an existing transportation conditions section and a future transportation conditions section. Both of these sections are organized by mode (roadways, bicycle and pedestrian, and other modes). For each mode, a description of modal facilities and demand is provided first, followed by a discussion of identified deficiencies. Roadway deficiencies are broken down by the categories of capacity and level of service (LOS), traffic operations, safety, and geometrics.

Part II. of the report is divided into a land use section and environmental section. Within the land use section, information is first presented on existing land use conditions by corridor segment. This is followed by a discussion of estimated future land use conditions that are based on forecasts of housing units and employment. The environmental section contains a socioeconomic profile of the local population and an environmental scan characterizing existing environmental resources within the corridor.

It is noted that the transportation facility deficiencies identified in this report do not necessarily pose safety hazards, nor does the identification of these deficiencies imply that the improvements required to address them will necessarily be constructed. Implementation of the improvement measures to be identified in the next phase of this study is dependent on the availability of funding. Preparation of this study by the Idaho Transportation Department does not guarantee adequate financial resources to implement these improvements.

[1] Bear Lake County, Bear Lake County Transportation Plan, (2003).

II. Transportation Conditions

Existing Transportation Conditions

Existing Roadway Conditions

EXISTING ROADWAY FACILITIES

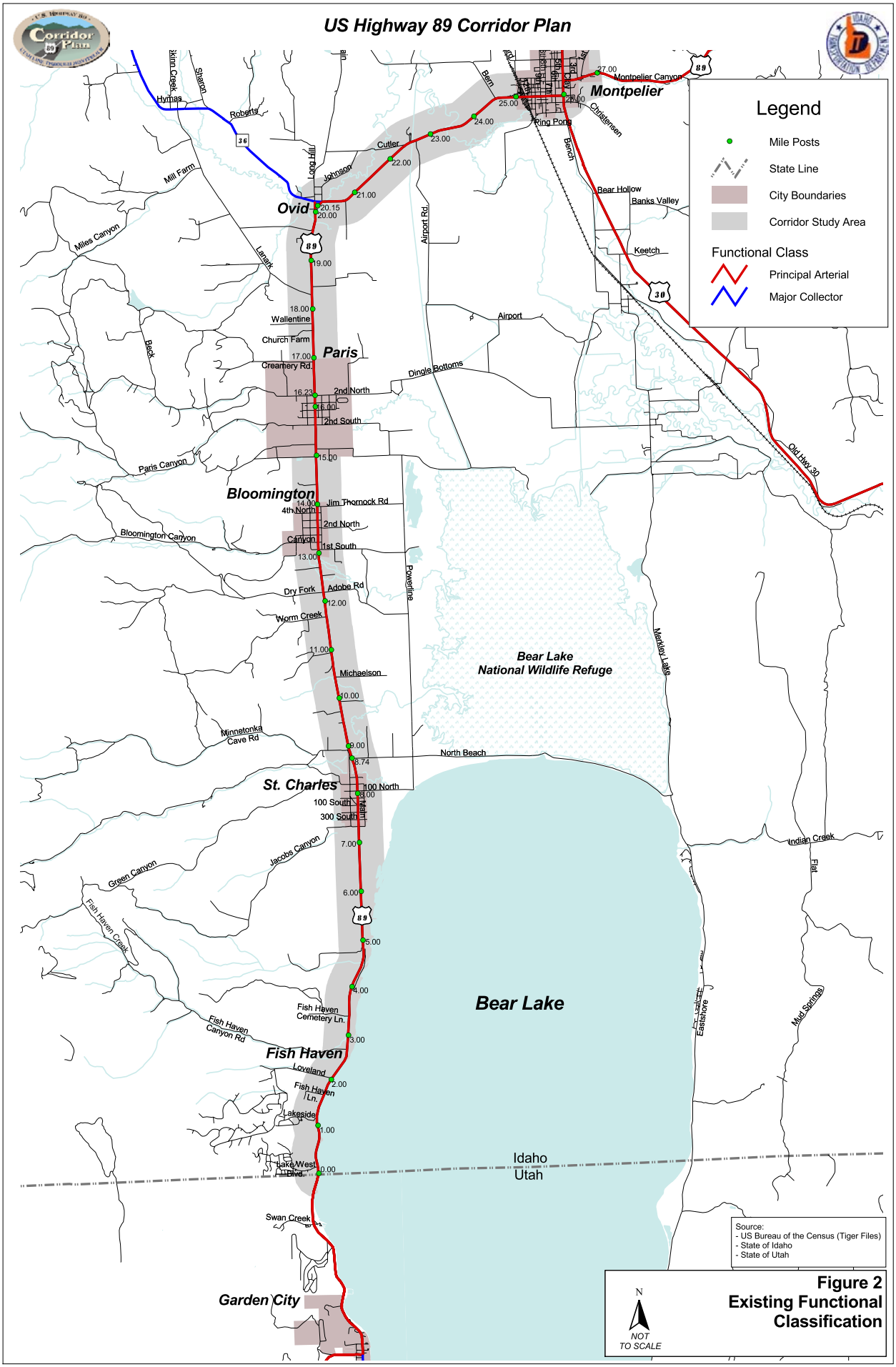
US Highway 89 is classified as a rural principal arterial within the Idaho State Highway Plan[2] (see Figure 2). Rural principal arterials are defined as having the following general characteristics:[3]

- Serve corridor movements having trip length and travel density characteristics indicative of substantial statewide or interstate travel.
- Serve all, or virtually all, urban areas of 50,000 and over population and a large majority of those with population of 25,000 and over.
- Provide an integrated network without stub connections except where unusual geographic or traffic flow conditions dictate otherwise.

With regard to this functional classification, US 89 serves three types of traffic within the corridor study area:

- Internal-internal traffic, which are trips having both ends in the study area. An example of this would be a trip from Paris to Montpelier.
- Internal-external and external-internal traffic, which are trips with one end outside of the study area and the other end inside. An example of this would be the large percentage of trips carried on US 89 from Salt Lake City to the Bear Lake area.
- External-external traffic, which are trips with both ends outside of the study area, but pass through the study area. As a major multi-state recreational route connecting five national parks (Zion and Bryce Canyon Parks in Utah, Yellowstone and Teton Parks in Wyoming, and Glacier Park in Montana), US 89 carries a significant proportion of these trips.

[2] Idaho Transportation Department, Idaho State Highway Plan, (1998).
[3] Idaho Transportation Department, Transportation in Your Local Comprehensive Plan, (1998).


US Highway 89 Corridor Plan
Legend
Mile Posts
State Line
City Boundaries
Corridor Study Area
Functional Class
Principal Arterial
Major Collector
Montpelier
Montpelier Canyon
Ovid
Paris
Wallentine
Bloomington
Bloomington Canyon
St. Charles
Fish Haven
Garden City
Bear Lake
Bear Lake National Wildlife Refuge
Idaho
Utah
Hymas
Roberts
Cutler
Johnson
Mill Farm
Miles Canyon
Lanark
Back
Church Farm
Creamery Rd.
Dingle Bottoms
2nd North
2nd South
Paris Canyon
Jim Thornock Rd
4th North
2nd North
Canyon
1st South
Dry Fork
Adobe Rd
Worm Creek
Powerline
Michaelson
Minnetonka Cave Rd
North Beach
100 North
100 South
300 South
Main
Jacobs Canyon
Green Canyon
Fish Haven Creek
Fish Haven Cemetery Ln.
Fish Haven Canyon Rd
Loveland
Fish Haven Ln.
Lakeside
Lake West Blvd.
Swan Creek
Ring Pond
Christensen
Bench
Bear Hollow
Banks Valley
Keetch
Airport
Airport Rd.
Old Hwy 30
Markley Lake
Indian Creek
Flat
Mud Springs
Source:
- US Bureau of the Census (Tiger Files)
- State of Idaho
- State of Utah
N
NOT TO SCALE
Figure 2
Existing Functional Classification

Along most of the corridor, these traffic volumes are accommodated by two through travel lanes. The only exceptions to this are in Paris and Montpelier, where US 89 widens to four lanes over short sections of the highway (see Figure 3). There are no passing lanes within the two-lane sections. Median turn lanes are provided in Montpelier between Washington St. and Clay St. and for a short distance to the east of 4th St. The only intersections with turn lanes are in Montpelier at Washington St./4th St. and 4th St./Clay St. The shoulders along US 89 are either asphalt or a combination of asphalt and earth and range from 3 to 11 feet in width.

US 89 is located on a generally straight and level alignment within the study area, with a few large curves in the Fish Haven and Ovid areas. Structures are located at South St. Charles Creek, North St. Charles Creek, Bloomington Creek, Ovid Creek (south), Ovid Creek (east), Bear River Canal, Bear River, and 12th St. railroad overpass in Montpelier.

Operationally, the speed limits along US 89 range from 25 mph for segments in Paris and Montpelier to 65 mph in the undeveloped and less developed areas outside of Fish Haven, St. Charles, Bloomington, Paris, and Montpelier. No-passing zones are generally infrequent, with an average of about 15% along the two-lane sections. Intersection traffic control is provided by stop signs on all minor road approaches to US 89, with the exception of Washington St./8th St. in Montpelier, where there is a traffic signal.

All county roads intersecting with US 89 are two-lane facilities. State Highway 36, which intersects US 89 at Ovid corner, is a two-lane major collector. US Highway 30, which forms a portion of US 89 between Washington St. and Clay St. in Montpelier, is a four-lane principal arterial.

EXISTING TRAFFIC VOLUMES

As shown in Figure 4, existing annual average daily traffic (AADT) volumes are relatively low throughout the corridor, ranging from roughly 1,000 to 8,500 vehicles per day (vpd). AADT is defined as the annual total two-way traffic volume along a particular segment, divided by the number of days in the year. The AADT data was obtained from ITD's Graphic Roadway Application for Information Location (GRAIL) database. The highest volumes of 6,000 to 8,500 vpd occur within Montpelier. Volumes generally range from 2,000 to 3,000 vpd between the Idaho-Utah state line and St. Charles, reflecting the recreational traffic within the Bear Lake area, and between Lanark Rd. and Montpelier. The lowest volumes of 1,000 to 2,000 vpd occur between St. Charles and Lanark Rd., with the exception of a short segment within Paris.

Because of the large component of recreational traffic carried on US 89 during the summer months, there is substantial seasonal variation in average daily traffic volumes.

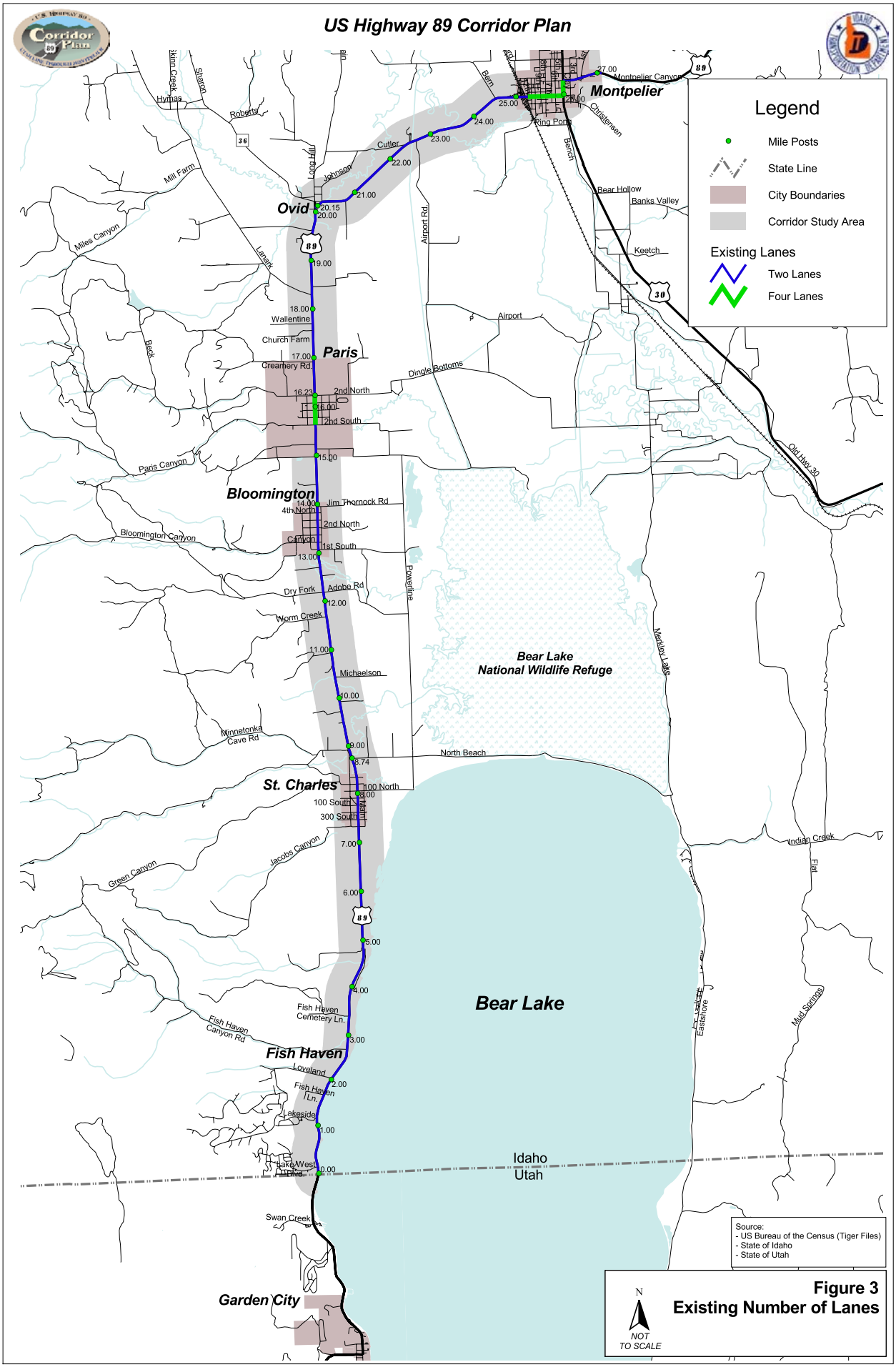


Figure 3
Existing Number of Lanes

US Highway 89 Corridor Plan

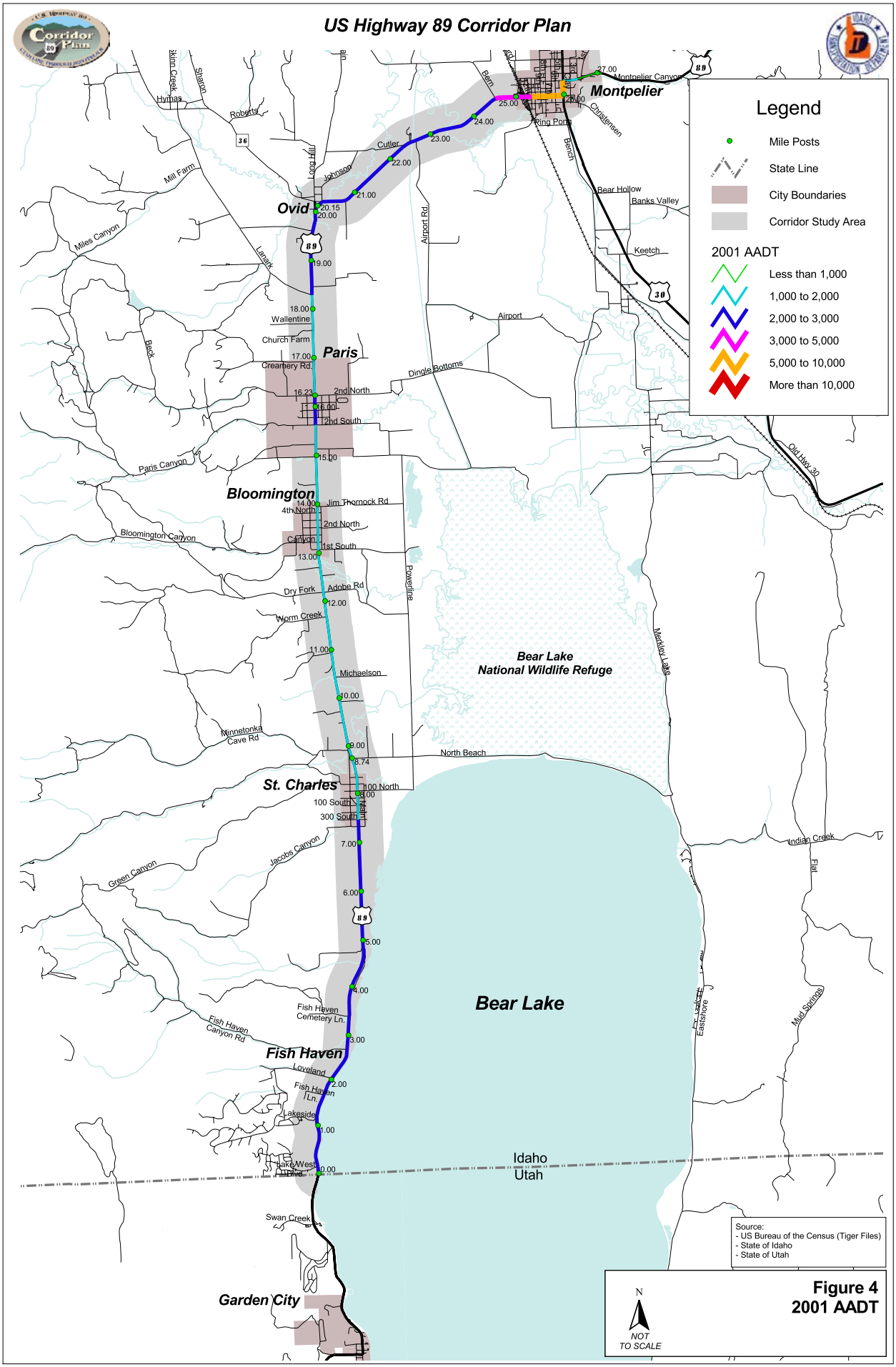
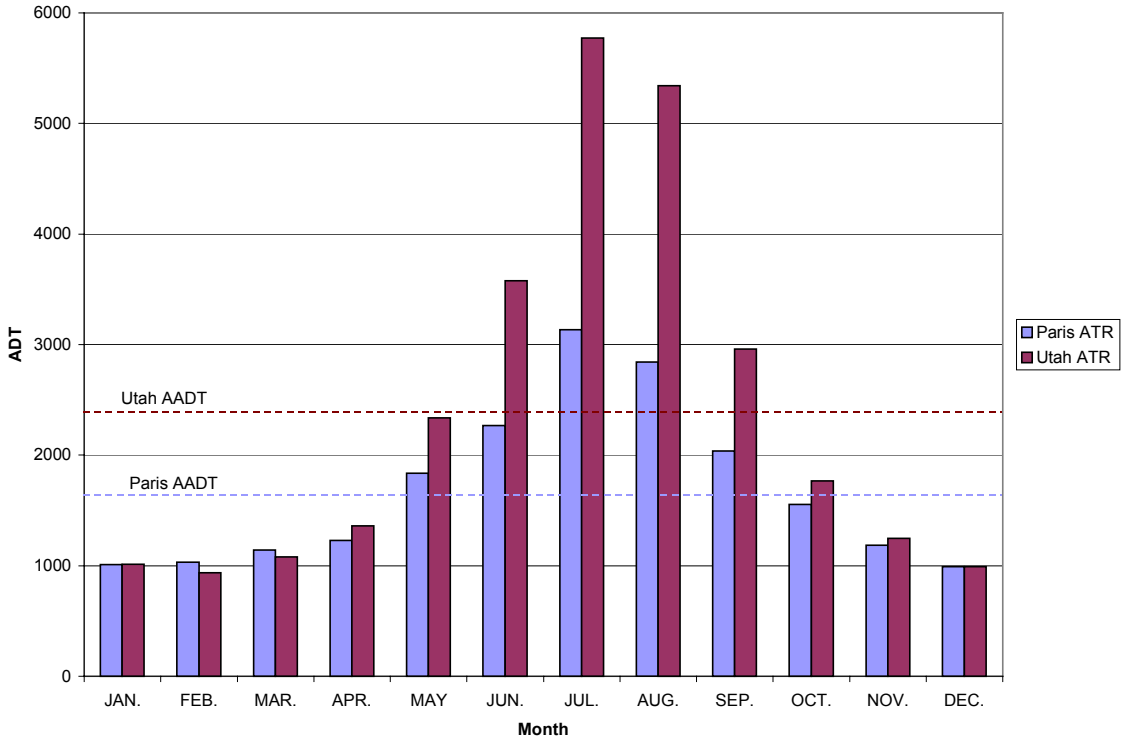


Figure 4
2001 AADT

This can be seen from the monthly ADT volumes shown in Figure 5.

Figure 5
US 89 Monthly Traffic Variation

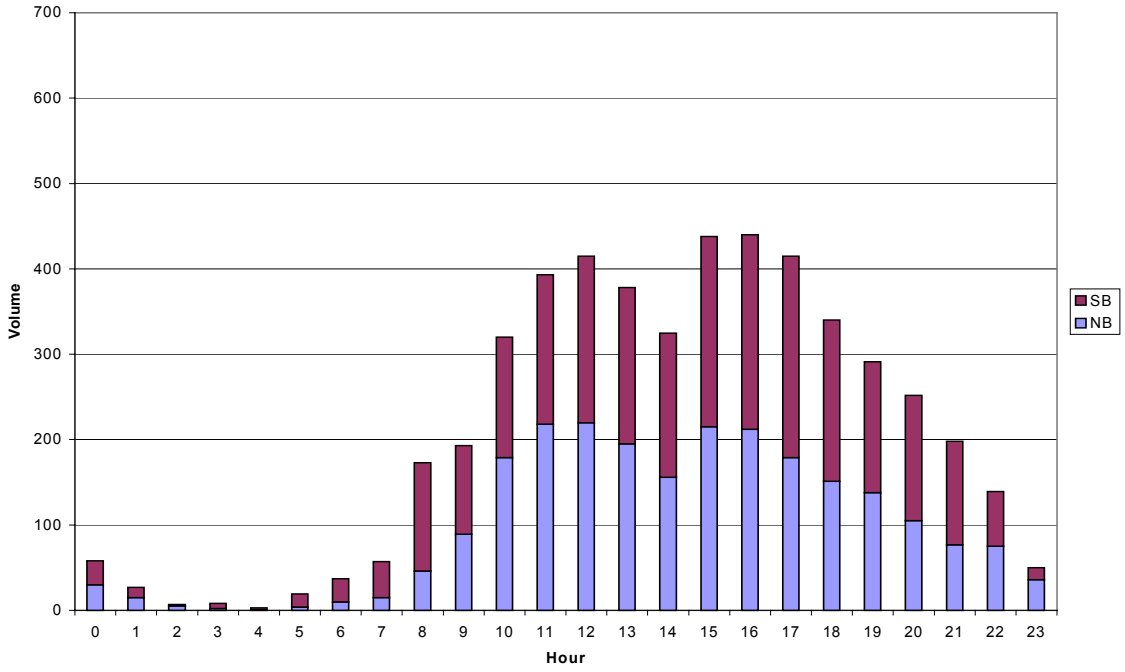


The ADT data was obtained from two automatic traffic recorders, one between Bloomington and Paris and the other at the south end of the corridor between Garden City, Utah and the Idaho-Utah state line. At the Bloomington-Paris location, the ADT of roughly 3,000 vpd for the peak month of July is over three times higher than the ADT of 1,000 vpd for the winter months of December through February. This relationship is even more pronounced at the Utah location, where the July ADT of nearly 6,000 vpd is six times higher than the 1,000 vpd for the winter months.

Variation in traffic volumes by hour of the day is shown Figure 6 for three locations along the corridor. The volume data was obtained from 24-hour traffic counts performed on Saturday, July 27th, 2002 during one of the highest-volume periods of the year. At the first location between Lakeside Dr. and Fish Haven Lane in the Fish Haven area, volumes increase steadily until 11:00 a.m. and remain at peak levels until 6:00 p.m. This probably reflects the continuous level of recreational activity that occurs in the Bear Lake area in the summer during this period of the day. Between Bloomington and Paris, the diurnal distribution of traffic is centered around an afternoon peak occurring between 2:00 p.m.

Figure 6
US 89 Hourly Traffic Variation

M.P. 1.5 – Lakeside Dr. – Fish Haven Ln.



M.P. 14.6 – Bloomington - Paris

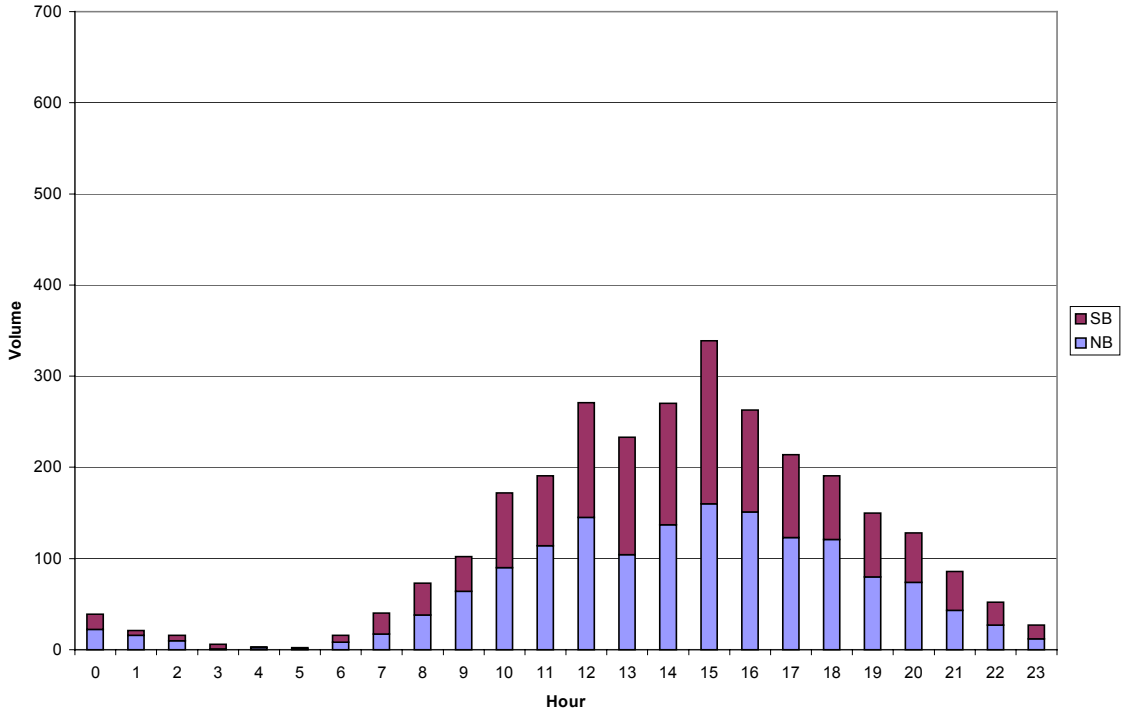
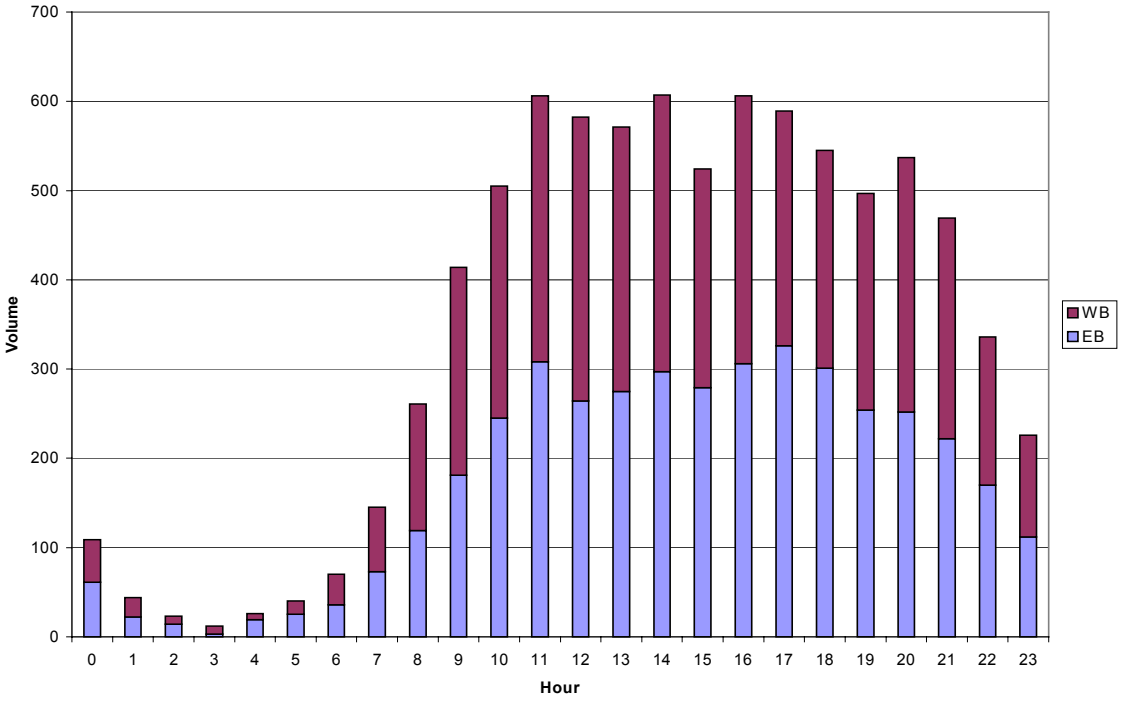


Figure 6 (cont.)
US 89 Hourly Traffic Variation

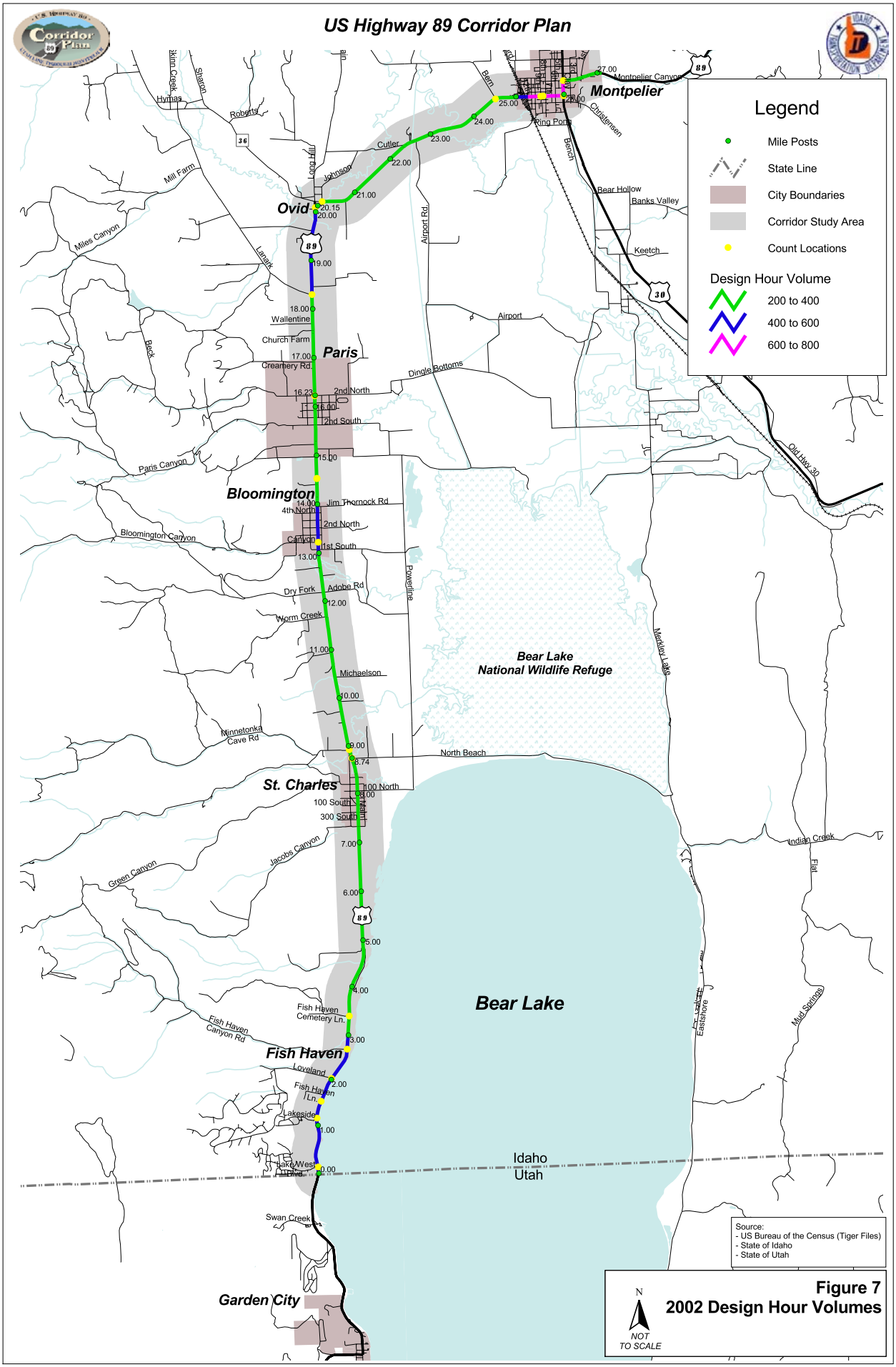
M.P. 25.6 – Montpelier



and 3:00 p.m. At the third location in Montpelier along Washington St. between 7th St. and 8th St., the traffic pattern is similar to that in the Fish Haven area, with volumes increasing steadily until 10:00 a.m., then remaining at peak levels until 8:00 p.m.

Design hour volumes (DHVs) are shown in Figure 7. These volumes correspond to the time period for which existing and future deficiencies were analyzed. For the corridor study area, it was decided that the 30th highest hour would be the most appropriate design hour. Thus, the DHVs shown represent the 30th highest hourly volumes of all hourly volumes during the year. The decision to use 30th highest hour volumes rather than average weekday peak hour volumes was based on the strong seasonal traffic peaking characteristics described above. Use of these volumes allows peak period traffic demands and facility needs to be accurately represented, thus avoiding the underestimation of these demands and needs that would occur with the use of average weekday peak hour volumes.

Within the study area, the 30th highest hour along US 89 occurs in late July. This was determined through the examination of historical traffic count data from the two automatic traffic recorders described previously. Based on this information,


US Highway 89 Corridor Plan
Legend
Mile Posts
State Line
City Boundaries
Corridor Study Area
Count Locations
Design Hour Volume
200 to 400
400 to 600
600 to 800
Montpelier
Ovid
Paris
Bloomington
St. Charles
Fish Haven
Garden City
Bear Lake
Bear Lake National Wildlife Refuge
Idaho
Utah
Source:
- US Bureau of the Census (Tiger Files)
- State of Idaho
- State of Utah
N
NOT TO SCALE
Figure 7
2002 Design Hour Volumes

one-hour traffic counts were performed during the afternoons of Saturday, July 20th and Saturday, July 27, 2002 at the locations shown in Figure 7.

COMMITTED AND PLANNED ROADWAY IMPROVEMENTS

The only committed or planned roadway improvement project along US 89 within the study area is the signalization of the intersection of Washington St./4th St.[4] There are no committed or planned improvements for any of the county roads within the study area.

EXISTING ROADWAY NEEDS

Existing needs in the areas of capacity and level of service (LOS), traffic operations, safety, and geometrics were identified through two approaches. With the first approach, existing roadway conditions within each area were measured using the transportation inventory data and compared to ITD standards. Where the standards were not met, deficiencies were identified. The second source of information on existing deficiencies was from stakeholders, agency staff, and the public. This information was obtained through a series of stakeholder interviews, an ITD Management Team meeting, a joint Technical Advisory Committee and Task Force meeting, and a public open house. It is described within the "Reported Deficiencies" sections below as well as Table A-1 in Appendix A.

Existing Capacity and Level of Service

Existing capacity and LOS deficiencies were identified by comparing LOS estimates for all road segments and higher-volume intersections along US 89 to LOS standards for the study area. The basic level of service standard for rural principal arterials is LOS "B", as defined in ITD's *Highway Design Manual*.[5] In conjunction with ITD District 5 staff, this standard was modified to be consistent with existing and anticipated future levels of development adjacent to specific segments of US 89. The modified LOS standards are shown in Table 1 below.

Table 1
US 89 Level of Service Standards

Segment		LOS
From	**To**	**Standard**
Idaho-Utah state line	E. 2nd North St. (Paris)	C
E. 2nd North St. (Paris)	12th St. overpass (Montpelier)	B
12th St. overpass (Montpelier)	Montpelier e. city limit	C

[4] Idaho Transportation Department, Statewide Transportation Improvement Program, (2002).
[5] Idaho Transportation Department, Highway Design Manual, (2002).

Existing LOS on Roadway Segments

Segment LOS estimates were developed using the 2002 DHV counts described earlier. The segments and associated LOS estimation methodologies that were used were defined primarily by changes in the level of development adjacent to the highway. For two-lane segments in rural undeveloped areas, such as between Fish Haven and St. Charles, the LOS analysis was performed according to the methodology outlined in the *2000 Highway Capacity Manual (HCM2000)*[6] for two-lane rural highways. With this methodology, the criteria for determining level of service are average travel speed and percent time-spent-following. These criteria reflect drivers' expectations in undeveloped areas to travel at reasonable speeds and have the ability to maneuver around slower-moving vehicles traveling at less than the desired speed.

Within the rural developed areas of Fish Haven, St. Charles, Bloomington, and Paris, a second methodology developed by the Florida Department of Transportation (FDOT) was used. This methodology, called HIGHPLAN, uses the *HCM2000* analysis technique for rural two-lane highways, but implements LOS thresholds based on percent of free flow speed. It is based on the belief that the most relevant service measure for motorists on two-lane highways in developed areas is to maintain a reasonable speed, instead of the *HCM2000's* primary service measure of percent time spent following. Drivers in developed areas primarily base their LOS expectations on how close they're traveling relative to their free flow speeds and not so much based on the ability to pass.[7] For example, drivers in a small, developed, area which is posted for 55 mph would primarily like to travel near that speed. Similarly, along a road in a recreational area posted at 45 mph or in a community posted at 40 mph, drivers probably accept that they need to slow down and are quite satisfied to proceed through these areas close to those speeds.

Use of the HIGHPLAN analysis procedure in these areas avoids the problem with the *HCM2000* methodology in which the estimated LOS would likely be worse than what it is perceived as by most drivers. For example, because of the percent time-spent-following criteria that is used, a facility within a rural developed area with an average travel speed that is the same as the posted speed of 50 mph could only have a level of service of C, an unreasonably pessimistic result.

Although created in Florida, HIGHPLAN's[8] developers recommend that it is applicable throughout the U.S., whether to analyze a specific roadway or to conduct systemwide analyses.

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[6] Transportation Research Board, Highway Capacity Manual, Special Report 209 (Washington, D.C.: National Research Council, 2000).
[7] Florida Department of Transportation, Quality/Level of Service Handbook, (2002).
[8] Further information on HIGHPLAN is available at:
http://www11.myflorida.com/planning/systems/sm/los/default.htm.

Within Montpelier, a third LOS analysis methodology was used, the *HCM 2000* urban arterial procedure. The LOS criterion used with this methodology is overall average travel speed along a segment of an urban arterial, which reflects both running time and delay incurred at signalized and stop controlled intersections.

The results of the roadway segment level of service analysis are shown in Figure 8 and Table 2.

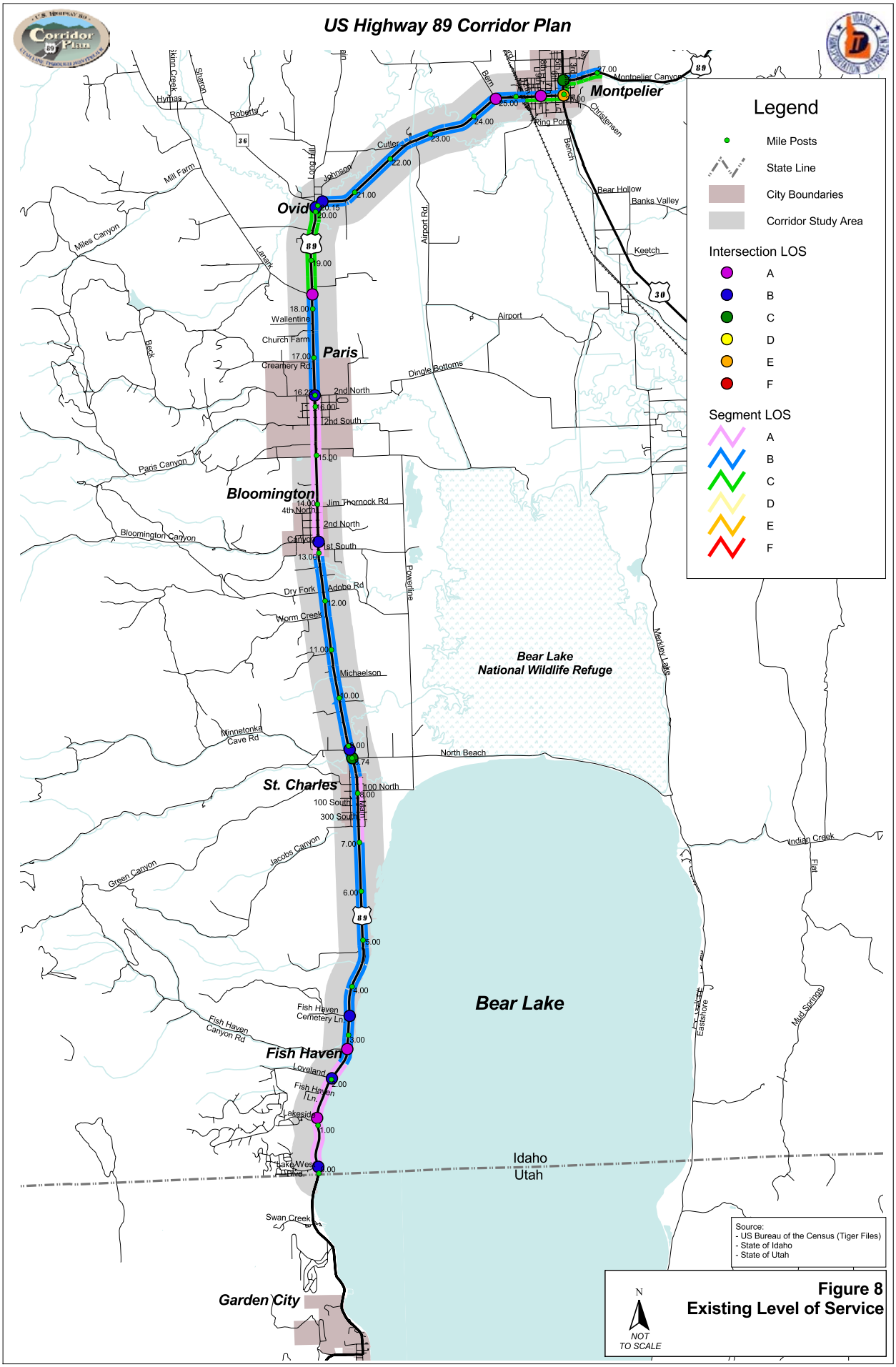
Table 2
Existing Level of Service Summary
US 89 Segments

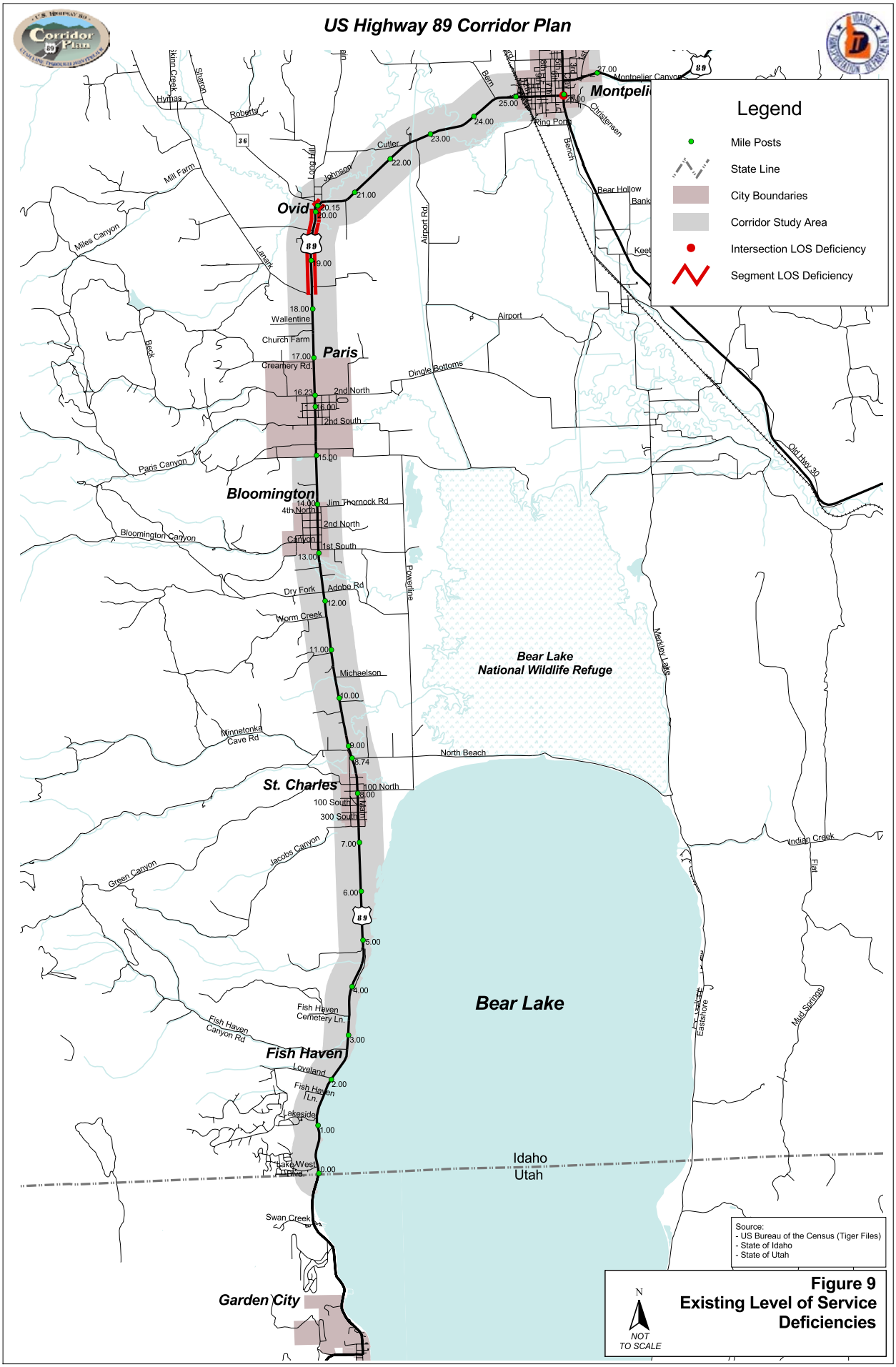
Segment		Existing LOS*	LOS Std.	Deficient?
From	To			
Idaho-Utah state line	Fish Haven Creek	A/A	C	N/N
Fish Haven Creek	Fish Haven n. boundary	B/B	C	N/N
Fish Haven n. boundary	St. Charles s. city limit	A	C	N
St. Charles s. city limit	300 North St. (St. Charles)	A/A	C	N/N
300 North St. (St. Charles)	Bloomington Creek bridge	B	C	N
Bloomington Creek bridge	Bloomington n. city limit	A/A	C	N/N
Bloomington n. city limit	Paris s. city limit	A	C	N
Paris s. city limit	E. 2nd South St. (Paris)	A/A	C	N/N
E. 2nd South St. (Paris)	E. 2nd North St. (Paris)	A/A	C	N/N
E. 2nd North St. (Paris)	Lanark Rd.	B	B	N
Lanark Rd.	Ovid corner	C	B	Y
Ovid corner	12th St. overpass (Mont.)	B	B	N
12th St. overpass (Mont.)	Montpelier e. city limit	C/B	C	N/N

* Double letters indicate level of service by direction (northbound/southbound, eastbound/westbound); single letters indicate level of service for both directions.

Comparison of the LOS estimates with the standards indicate that the only existing deficiency is between Lanark Rd. and Ovid corner, where LOS "C" occurs (see Figure 9 and Table 2). The primary factors contributing to this are the somewhat higher traffic volumes along this segment (roughly 600 vehicles per hour) and the higher percentage of no-passing zones (54%). This substandard segment accounts for roughly 7% of the total lane miles and 7% of the total vehicle miles traveled (VMT) along the corridor.

Several inconsistencies may seem apparent between the LOS values for segments in the rural developed areas and those for segments in the undeveloped areas. For example,


US Highway 89 Corridor Plan
Legend
Mile Posts
State Line
City Boundaries
Corridor Study Area
Intersection LOS
A
B
C
D
E
F
Segment LOS
A
B
C
D
E
F
Montpelier
Ovid
Paris
Bloomington
St. Charles
Fish Haven
Garden City
Bear Lake
Bear Lake National Wildlife Refuge
Idaho
Utah
Montpelier Canyon
Ring Porn
Bear Hollow
Banks Valley
Keetch
Airport
Airport Rd
Wallentine
Church Farm
Creamery Rd
2nd North
2nd South
Paris Canyon
Jim Thornock Rd
4th North
2nd North
1st South
Bloomington Canyon
Dry Fork
Adobe Rd
Worm Creek
Michaelson
Ninnetonka Cave Rd
North Beach
100 North
100 South
300 South
Jacobs Canyon
Green Canyon
Fish Haven Cemetery Ln
Fish Haven Canyon Rd
Loveland
Fish Haven Ln.
Lakeside
Lake West
Swan Creek
Indian Creek
Mud Springs
Powerline
Merkley Lakes
Dingle Bottoms
Source:
- US Bureau of the Census (Tiger Files)
- State of Idaho
- State of Utah
N
NOT TO SCALE
Figure 8
Existing Level of Service


US Highway 89 Corridor Plan
Legend
Mile Posts
State Line
City Boundaries
Corridor Study Area
Intersection LOS Deficiency
Segment LOS Deficiency
Montpelier
Ovid
Paris
Bloomington
St. Charles
Fish Haven
Garden City
Bear Lake
Bear Lake National Wildlife Refuge
Idaho
Utah
Source:
- US Bureau of the Census (Tiger Files)
- State of Idaho
- State of Utah
N
NOT TO SCALE
Figure 9
Existing Level of Service Deficiencies

LOS "A" is shown for the segment between the Idaho-Utah state line and Fish Haven Creek and LOS "B" is shown between Fish Haven and St. Charles. While the reverse might be expected, this is due to the different level of service criteria that are used for each segment. Between the Idaho-Utah state line and Fish Haven Creek, the "percent of free flow speed" criterion is applied, consistent with most drivers' expectations to maintain a reasonable speed along this segment and not necessarily to pass, while between Fish Haven and St. Charles, the more rigorous criteria of average travel speed and percent time-spent-following are applied, consistent with the higher level of service expectations within this area.

Specific input parameter and input data values for the roadway segment LOS analyses are shown in Appendix B.

Existing Intersection LOS

LOS estimates were also developed for the intersections shown in Figure 8 using 2002 DHV counts. The analysis was performed according to the procedures contained in the *HCM2000*[9] for signalized and unsignalized intersections. These methodologies provide a basis for grading the operational performance of intersections based upon vehicle delay, where LOS A, B, and C are generally good, D represents significant delays, E is approaching capacity, and F is congested (over-capacity). Typically, at two-way stop controlled intersections, the minor street left-turn is the critical movement with the largest delay.

The results of the intersection analysis are shown in Table 3. The only location where the LOS standard is exceeded is at the intersection of Washington St./4th St., where LOS "E" occurs on the eastbound approach. LOS "A" or "B" exists on both the major and minor road approaches for all of the remaining intersections, with the exception of Clay St./4th St., which operates at LOS "C".

Table 3
Existing Level of Service Summary
US 89 Intersections

Intersection		Existing LOS*	LOS Std.	Deficient?
Location	**Control**			
US 89/ Lake West Blvd.	Two-way stop	A/B	C	N/N
US 89/ Lakeside Dr.	Two-way stop	A/A	C	N/N
US 89/ Loveland Ln.	Two-way stop	A/B	C	N/N

[9] Transportation Research Board, Highway Capacity Manual, Special Report 209 (Washington, D.C.: National Research Council, 2000).

Table 3 (cont.)
Existing Level of Service Summary
US 89 Intersections

Intersection		Existing LOS*	LOS Std.	Deficient?
Location	Control			
US 89/ Fish Haven Canyon Rd.	Two-way stop	A/A	C	N/N
US 89/ Fish Haven Cemetery Rd.	Two-way stop	A/B	C	N/N
US 89/ North Beach Rd.	Two-way stop	A/B	C	N/N
US 89/ Minnetonka Cave Rd.	Two-way stop	A/A	C	N/N
US 89/ Bloomington Canyon Rd.	Two-way stop	A/B	C	N/N
US 89/ 2nd North St.(Paris)	Two-way stop	A/B	C	N/N
US 89/ Lanark Rd.	Two-way stop	A/A	B	N/N
US 89/ Ovid corner (s.)	Two-way stop	A/B	B	N/N
US 89/ Ovid corner (n.)	Two-way stop	A/B	B	N/N
US 89/ Bern Rd.	Two-way stop	A/A	B	N/N
Washington St./8th St.	Traffic signal	A	C	N
Washington St./4th St.	Two-way stop[10]	A/E	C	N/Y
4th St./Clay St.	Two-way stop	A/C	C	N/N

* Double letters indicate level of service by movement (major/minor) for unsignalized intersections. Single letter indicates overall level of service for a signalized intersection.

Specific input parameter and input data values for the intersection LOS analyses are shown in Appendix B.

Reported Existing Roadway Capacity Deficiencies

There were only two reported deficiencies related to capacity (see Figure 10 and Appendix A). The first deficiency is the long traffic back-ups that can occur during the summer months on the westbound approach of North Beach Rd. to US 89. This condition was confirmed by the intersection LOS analysis described in the previous section. The second reported deficiency is that the only direct connection to the south from Montpelier is on US 89 via the 12th St. overpass. Although US 30 also serves north-south through traffic and Dingle Rd. provides local access to the south, these routes are not as direct as US 89.

[10] Washington St./4th St. intersection now signalized, but was two-way stop at the time traffic counts were taken.

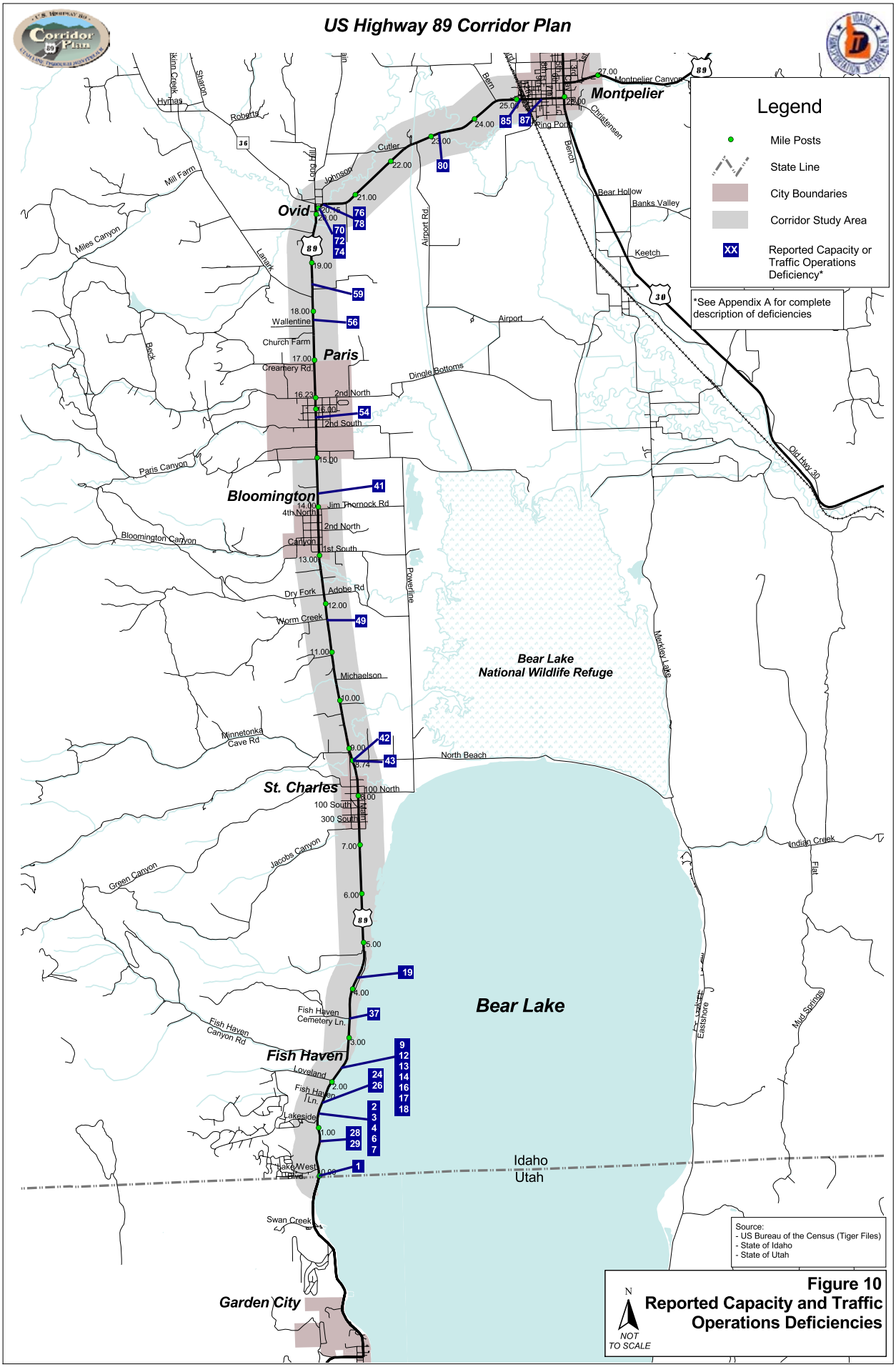


Figure 10
Reported Capacity and Traffic Operations Deficiencies

Existing Traffic Operations

Traffic operations deficiencies were identified for two-lane segments where there are inadequate passing opportunities and for intersections where turn lanes are needed.

Existing Traffic Operations on Roadway Segments

As described in the previous section, one of the criteria used in the *HCM2000* level of service methodology for two-lane rural highways is the "percent time-spent-following" (see Appendix C for definition of this term). Since this is also a measure of passing opportunities (higher values of percent time-spent-following imply fewer passing opportunities), those segments with LOS deficiencies may also be considered as having traffic operations deficiencies. The only segment having this deficiency is between Lanark Rd. and Ovid corner, as shown in Figure 11.

Existing Intersection Traffic Operations

Traffic operations deficiencies were also identified for intersections where left-turn lanes or right-turn lanes on US 89 may be needed. Left-turn lanes may be needed to reduce the likelihood of rear-end collisions or prevent the loss of capacity from left-turning vehicles blocking the flow of through traffic. Right-turn lanes may be required to reduce the delay of through vehicles behind right-turning traffic and to increase the convenience of drivers turning right from the higher-speed through traffic stream.

Turn lane deficiencies were estimated using the volume warrants contained in the *ITD Traffic Manual*.[11] The warrants are based on the maximum single-lane DHV, turning DHV, and posted speed limit at an intersection. Thus, as the single-lane DHV and/or turning DHV increases, or as the speed limit increases, the warrant or volume threshold at which a turn lane should be considered decreases.

The results of the deficiency analysis are shown in Figure 11 and Tables 4 and 5. As can be seen, left- or right-turn lane deficiencies exist at over half of the intersections analyzed. Both left- and right-turn lane deficiencies exist at the intersections of US 89/Lake West Blvd., US 89/North Beach Rd., and US 89/Minnetonka Cave Rd.

Reported Existing Traffic Operations Deficiencies

A majority of the reported traffic operations deficiencies were for the Fish Haven area between the Idaho-Utah state line and the north end of Fish Haven (see Figure 10 and

[11] Idaho Transportation Department, Traffic Manual, (2002).

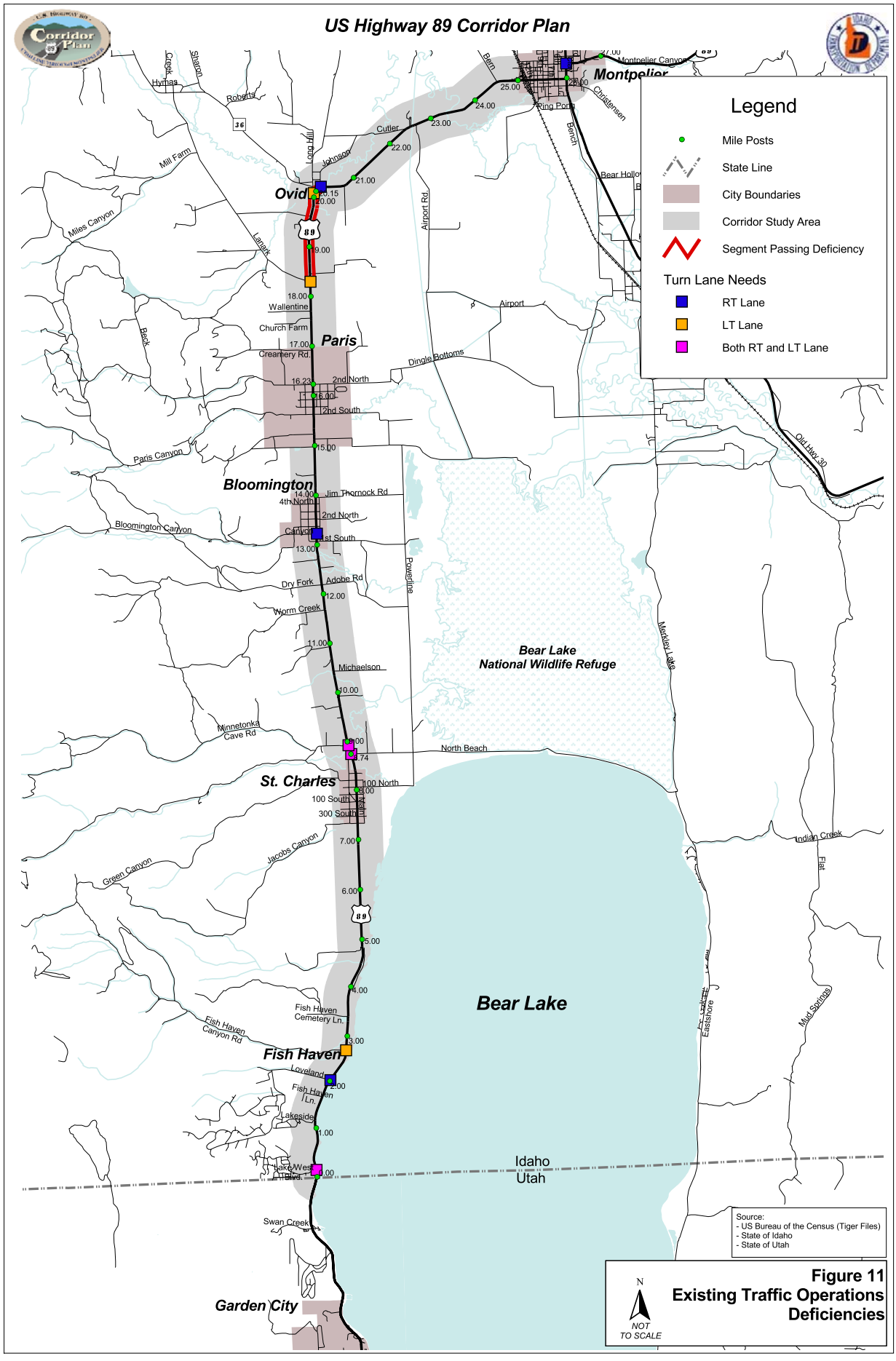


Figure 11
Existing Traffic Operations Deficiencies

Table 4
Existing Left-Turn Lane Deficiency Summary
US 89 Intersections

Intersection	Northbound/Eastbound			Southbound/Westbound		
	LT Vol.	Volume Threshold	Def. ?	LT Vol.	Volume Threshold	Def. ?
US 89/Lake West Blvd.	20	12	Y	N/A	N/A	N/A
US 89/Lakeside Dr.	5	12	N	N/A	N/A	N/A
US 89/Loveland Ln.	7	12	N	N/A	N/A	N/A
US 89/Fish Haven Canyon Rd.	28	14	Y	N/A	N/A	N/A
US 89/Fish Haven Cem. Rd.	5	12	N	N/A	N/A	N/A
US 89/North Beach Rd.	0	12	N	45	12	Y
US 89/Minnetonka Cave Rd.	26	12	Y	N/A	N/A	N/A
US 89/Bloom. Canyon Rd.	10	12	N	1	12	N
US 89/2nd North St. (Paris)	13	15	N	4	14	N
US 89/Lanark Rd.	17	12	Y	N/A	N/A	N/A
US 89/Ovid corner (s.)	49	12	Y	N/A	N/A	N/A
US 89/Bern Rd.	0	12	N	N/A	N/A	N/A

Table 5
Existing Right-Turn Lane Deficiency Summary
US 89 Intersections

Intersection	Northbound/Eastbound			Southbound/Westbound		
	RT Vol.	Volume Threshold	Def. ?	RT Vol.	Volume Threshold	Def. ?
US 89/Lake West Blvd.	N/A	N/A	N/A	10	6	Y
US 89/Lakeside Dr.	N/A	N/A	N/A	3	5	N
US 89/Loveland Ln.	N/A	N/A	N/A	11	5	Y
US 89/Fish Haven Canyon Rd.	N/A	N/A	N/A	9	10	N
US 89/Fish Haven Cem. Rd.	N/A	N/A	N/A	3	6	N
US 89/North Beach Rd.	41	6	Y	1	5	N
US 89/Minnetonka Cave Rd.	N/A	N/A	N/A	18	5	Y
US 89/Bloom. Canyon Rd.	0	5	N	12	6	Y
US 89/2nd North St. (Paris)	9	10	N	7	9	N
US 89/Lanark Rd.	N/A	N/A	N/A	2	6	N
US 89/Ovid corner (n.)	N/A	N/A	N/A	81	5	Y

Table 5 (cont.)
Existing Right-Turn Lane Deficiency Summary
US 89 Intersections

Intersection	Northbound/Eastbound			Southbound/Westbound		
	RT Vol.	Volume Threshold	Def. ?	RT Vol.	Volume Threshold	Def. ?
US 89/Bern Rd.	N/A	N/A	N/A	N/A*	N/A	N/A
Washington St./4th St.	1	25	N	N/A	N/A	N/A
4th St./Clay St.	80	9	Y	24	10	Y

* Westbound right-turn lane already exists.

Appendix A). Nearly all of these problems involve lake-related traffic, including:

- Driveway traffic conflicts, particularly south of Fish Haven Creek;
- Vehicles parked on the roadway and a lack of lake access parking;
- The need for scenic pullouts;
- The need for a center turn lane or passing lanes and/or intersection turn lanes; and
- General congestion.

With regard to driveway traffic conflicts, driveway spacing deficiencies were observed at a number of locations where ITD's minimum 300' spacing standard was not met.[12] Field survey also identified vehicle parking on the shoulders, as well as directly on the lake bottom due to low-water conditions. Several potential locations for scenic pull-outs in the area were identified. The feasibility of providing pull-outs will be examined more closely in the improvement phase of the study. The need for intersection turn lanes was verified for the intersections of Lake West Blvd., Loveland Lane, and Fish Haven Canyon Rd. The feasibility of constructing a center turn lane or passing lanes will be analyzed in the improvement phase of the study. Based on the existing level of service estimates, congestion does not appear to be a significant problem in the Fish Haven area; however the driveway access spacing deficiencies mentioned above contribute to traffic conflicts.

Between Fish Haven and Ovid corner, the primary reported deficiencies were conflicts between through and turning vehicles in the North Beach Rd. area, conflicts between general traffic and farm vehicles and livestock, and difficult winter driving conditions

[12] Idaho Transportation Department, Access Management: Standards and Procedures for Highway Right-of-Way Encroachments, (2002).

north of Lanark Rd. The need for turn lanes at North Beach Rd. was confirmed both through field survey and the deficiencies analysis described in the previous section. Potential measures to mitigate the farm traffic conflicts and difficult winter driving conditions will be investigated in the improvement phase of the study.

A significant reported deficiency at Ovid corner was the frequent driver confusion that occurs at both the south and north intersections. At the north intersection, in particular, this was described as a lack of awareness of the stop sign on the eastbound approach of SH 36 and the difficulty that drivers have in determining whether southbound vehicles on US 89 are turning right onto westbound SH 36 or continuing south on US 89.

There were no significant traffic operations deficiencies reported along the remainder of the corridor. A complete listing of the reported traffic operations deficiencies is provided in Appendix A.

Existing Traffic Safety

ITD maintains the High Accident Location (HAL) system for the identification and analysis of locations on the state highway system with potential safety deficiencies. The system produces separate weighted rankings of intersections and highway segments statewide. The position of a location on the HAL listing is determined by its statewide ranking in three categories:

- Collision frequency – locations that experience more crashes are ranked higher than locations that experience fewer crashes;
- Severity – locations characterized by crashes of greater injury severity and cost to society are ranked higher than locations with less crash severity; and
- Collision rate – locations which have a tendency to experience more collisions than expected for the amount of vehicle travel are ranked higher than locations which do not.[13]

The final HAL listing combines the results of the frequency, severity, and collision rate rankings into a single listing.

Individual listings of the top 200 intersections and highway segments statewide are produced, as well as the top 20 intersections and segments within each ITD district.[14] Within the corridor study area, there are no intersections or segments on either the statewide or District 5 HAL listings.

[13] Idaho Transportation Department, High Accident Location Report Methodology, (2002).
[14] Telephone conversation with Mike Elmer, ITD Office of Highway Safety, on 8/30/02.

Existing Traffic Safety on Roadway Segments

To provide a more comprehensive assessment of overall safety conditions within the study area, two additional safety measures were developed. The accident frequency for roadway segments was calculated as the number of accidents per 100 million vehicle miles traveled (see Appendix C for definition), using accident data for the period 1999 - 2001. These rates are shown in Table 6 and Figure 12, together with a comparison to statewide average rates for similar segments.

Table 6
US 89 Accident Rate Summary - Segments

Segment		Total Acc.*	Accident Rate	Statewide Avg.[15]	Above Avg.?
From	To				
Idaho-Utah state line	Fish Haven n. boundary	6	79.4	289.3	N
Fish Haven n. boundary	St. Charles s. city limit	10	99.3	108.5	N
St. Charles s. city limit	300 North St. (St. Charles)	1	42.4	189.9	N
300 North St. (St. Charles)	Bloomington Creek Bridge	6	80.0	108.5	N
Bloomington Creek Bridge	Bloomington n. city limit	1	58.9	189.9	N
Bloomington n. city limit	Paris s. city limit	2	102.3	108.5	N
Paris s. city limit	E. 2nd North St. (Paris)	4	127.7	359.9	N
E. 2nd North St.	Lanark Rd.	4	98.8	108.5	N
Lanark Rd.	Ovid corner	4	90.4	108.5	N
Ovid corner	12th St. overpass (Montpelier)	6	48.0	108.5	N
12th St. overpass	10th St.	1	90.9	359.9	N
10th St.	4th St.	19	422.4	449.4	N
4th St.	Clay St.	17	629.0	449.4	Y
Clay St.	Montpelier e. city limit	1	67.3	359.9	N

* Total accidents for the three-year period 1999 – 2001.

The highest accident rates along US 89 occur in Montpelier between 10th St. – 4th St. and 4th St. – Clay St. The only segment with an accident rate higher than the statewide

[15] Idaho Transportation Department, Idaho Traffic Collisions 2001, (2002).

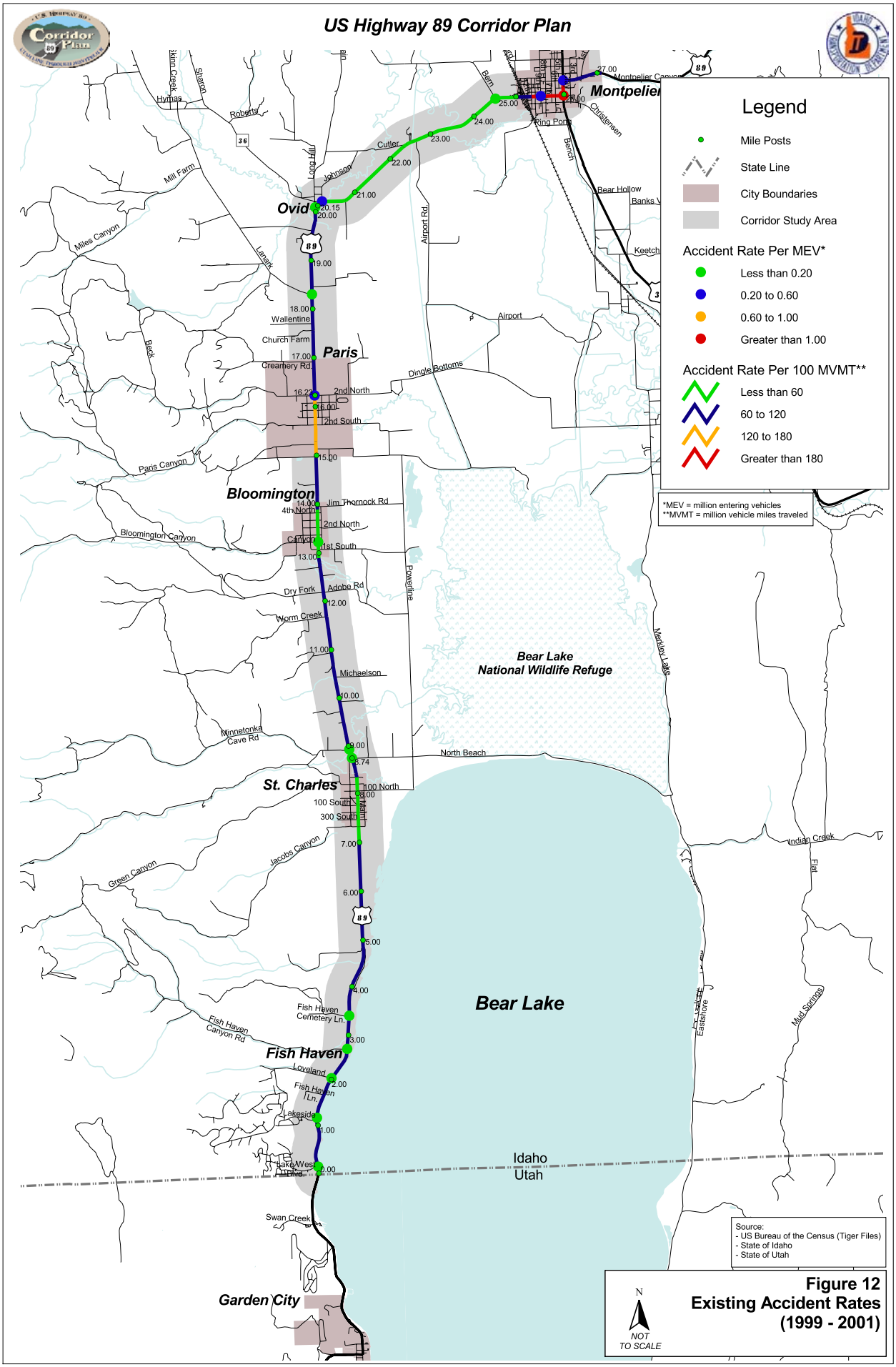


Figure 12
Existing Accident Rates (1999 - 2001)

average is the 4th St. – Clay St. segment. This segment accounts for roughly 1% of the total lane miles and 4% of the VMT along the corridor.

Existing Intersection Traffic Safety

A similar measure for intersections was calculated as accidents per million entering vehicles (MEV), again using accident data for the period 1999 – 2001. These rates are shown in Table 7, together with statewide average rates for similar intersections.

Table 7
US 89 Accident Rate Summary - Intersections

Intersection	Total Accidents*	Accident Rate	Statewide Avg.[16]	Above Avg.?
US 89/Lake West Blvd.	0	0.00	1.13	N
US 89/Lakeside Dr.	0	0.00	1.13	N
US 89/Loveland Ln.	0	0.00	1.13	N
US 89/Fish Haven Canyon Rd.	0	0.00	1.13	N
US 89/Fish Haven Cemetery Rd.	0	0.00	1.13	N
US 89/North Beach Rd.	0	0.00	0.68	N
US 89/Minnetonka Cave Rd.	0	0.00	1.13	N
US 89/Bloomington Canyon Rd.	0	0.00	1.13	N
US 89/2nd North St. (Paris)	1	0.45	1.13	N
US 89/Lanark Rd.	0	0.00	1.13	N
US 89/Ovid corner (s.)	0	0.00	1.13	N
US 89/Ovid corner (n.)	1	0.39	1.13	N
US 89/Bern Rd.	0	0.00	1.13	N
Washington St./8th St.	1	0.20	0.68	N
Washington St./4th St.	12	2.02	0.55	Y
4th St./Clay St.	3	0.54	0.55	N

* Total accidents for the three-year period 1999 – 2001.

As with the roadway segments, all of the intersections are below the statewide average, with the exception of Washington St./4th St., which is well above the average. The higher-than-average accident rate indicates a potential safety need that may be at least partially addressed with the recent signalization improvement at this location.

[16] Information received from Mike Elmer, ITD Office of Highway Safety, on 9/13/02.

Reported Existing Traffic Safety Deficiencies

Reported safety deficiencies are shown in Figure 13. Between the Idaho-Utah state line and the Paris north city limit, nearly all of the reported deficiencies are related to speed limits that are considered too high. In early 2002, the speed limit for most of the 55 mph speed zones along US 89 was increased to 65 mph. A frequent comment was that the new speed limits are too fast, particularly in transition areas or areas with more development, such as north of Fish Haven, the south side of St. Charles, and the north and south sides of Paris.

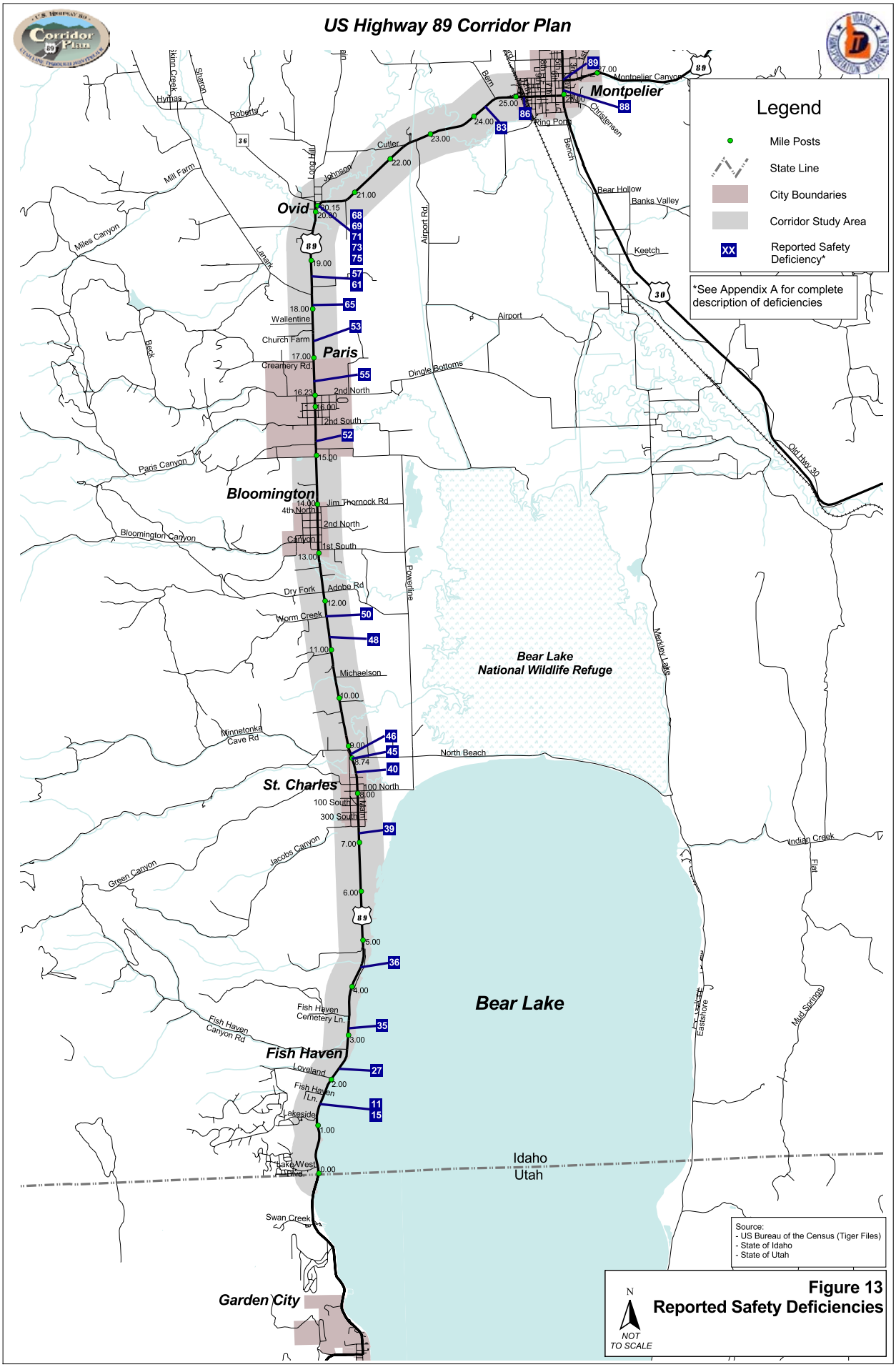
The existing 55 mph speed limit in the vicinity of North Beach Rd. and Minnetonka Cave Rd. was also considered too fast due to the congestion and higher number of turning movements that occur during the peak summer season.

While it will be important to further address these speed limit issues, this would be done most appropriately outside of the corridor planning study as a part of the Regional Transportation Coalition process. This is because speed limits may be regarded as shorter-term policy or management issues, whereas the focus of the corridor study is on longer-term needs and improvements related to the facility itself.

To the north of Paris, another frequently reported deficiency was the vertical curves (rises in the roadway) at several locations that limit sight distance to and from US 89. This condition was confirmed through field survey (see discussion on pg. 35). Another deficiency identified for this area was conflicts between farm vehicles and faster-moving through traffic. Both of these deficiencies may have been contributing factors in a fatal accident near Church Farm Rd. in early 2002 involving farm equipment and a passenger vehicle.

Poor intersection configuration was identified as a potential safety deficiency at Ovid corner. Although neither the north or south intersections are classified as high-accident locations and both have accident rates lower than the statewide average, field survey confirmed that intersection sight distance deficiencies exist at both locations (see discussion on pg. 35). Reconfiguration of the existing intersections or some other geometric improvement may reduce the likelihood of safety problems. These improvement options will be considered in the next phase of the study.

The primary safety deficiency reported for the Montpelier area was the lack of awareness of the stop sign at 4th St./Clay St. by westbound drivers, causing them to proceed into the intersection without stopping. Again, although this intersection is not classified as high-accident location and has an accident rate slightly below the statewide average, mitigation measures to address this issue may be considered in the improvement phase of the study.


US Highway 89 Corridor Plan
Legend
Mile Posts
State Line
City Boundaries
Corridor Study Area
XX Reported Safety Deficiency*
*See Appendix A for complete description of deficiencies
Montpelier
Ovid
Paris
Bloomington
St. Charles
Fish Haven
Garden City
Bear Lake
Bear Lake National Wildlife Refuge
Idaho
Utah
Source:
- US Bureau of the Census (Tiger Files)
- State of Idaho
- State of Utah
N
NOT TO SCALE
Figure 13
Reported Safety Deficiencies

Existing Roadway Geometrics

Existing Geometrics on Roadway Segments

Existing geometric deficiencies were identified for all road segments and higher-volume intersections along US 89. For road segments, this was done by comparing existing lane and shoulder widths to the standards contained in the *ITD Highway Design Manual*.[17] As shown in Table 8, the standards vary depending on traffic volume, average running speed, and the percentage of trucks in the traffic stream.

Table 8
ITD Lane and Shoulder Width Standards

AADT	Avg. Running Speed	Less Than 10% Trucks		10% or More Trucks	
		Lane Width	Shoulder Width	Lane Width	Shoulder Width
Less Than 750 veh.	**Under 50 mph**	9 ft.	2 ft.	10 ft.	2 ft.
	50 mph and over	10 ft.	2 ft.	10 ft.	2 ft.
750 – 2,000 veh.	**Under 50 mph**	10 ft.	2 ft.	11 ft.	2 ft.
	50 mph and over	11 ft.	3 ft.	12 ft.	3 ft.
Over 2,000 veh.	**All speeds**	11 ft.	6 ft.	12 ft.	6 ft.

Source: ITD 2002 Design Manual, Appendix C, Figure C-1.

Existing lane widths were obtained from ITD's GRAIL database. The lane width data was verified through field survey checks. Shoulder widths were estimated using sample data collected along the corridor through field survey and the use of ITD videologs.

The existing lane and shoulder width data is shown in Table 9 and Figure 14. All lane widths along the corridor are 12 feet, which exceeds the standard for each segment. Shoulder widths vary considerably, with deficiencies occurring for the following segments (see Figure 15):

- Idaho-Utah state line to St. Charles south city limit;
- Lanark Rd. to the Ovid Creek bridge (south);
- Ovid Creek bridge (south) to Cutler Lane; and
- 0.5 miles west of Bern Rd. to the 12th St. overpass in Montpelier.

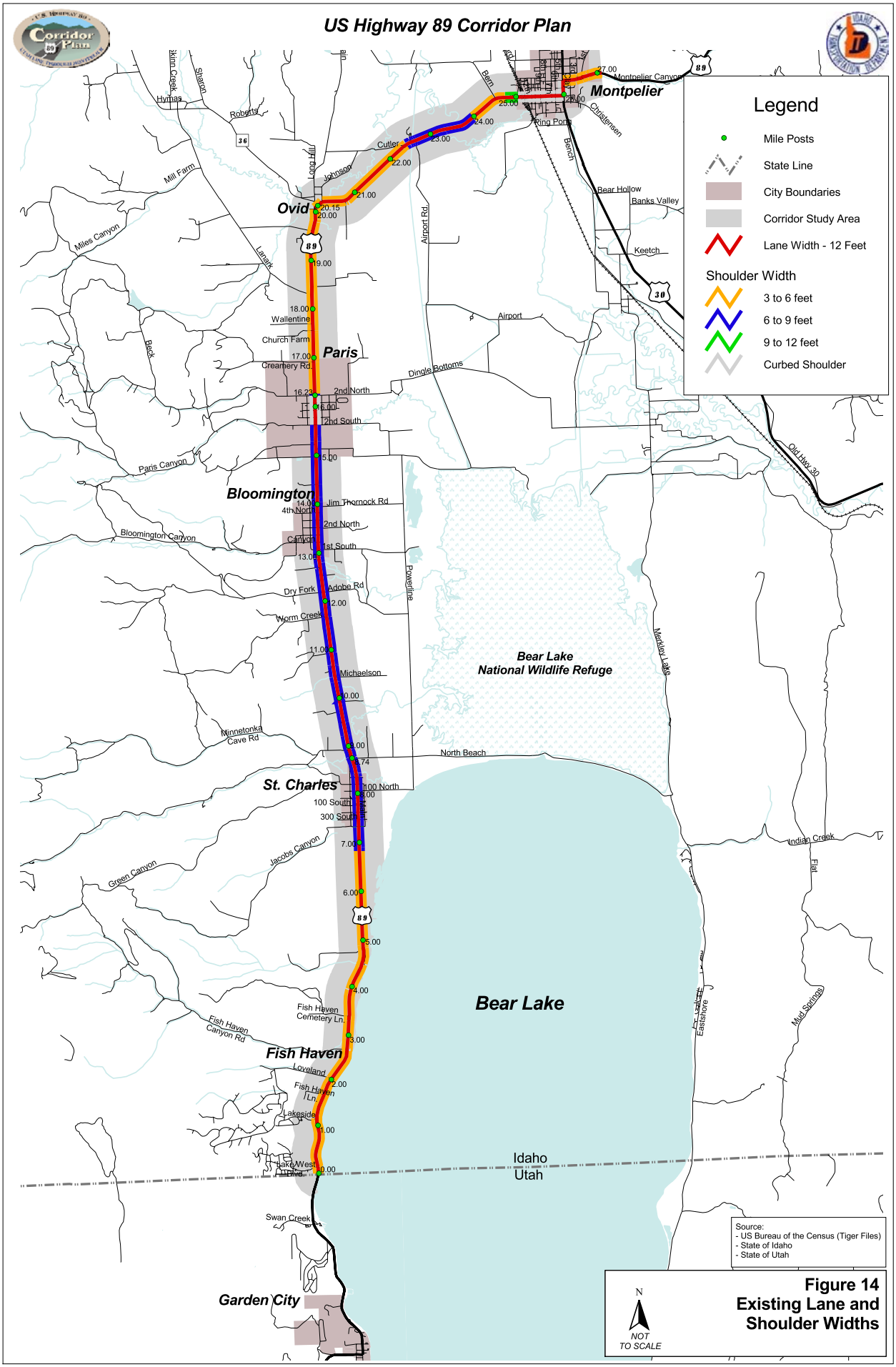
[17] Idaho Transportation Department, Highway Design Manual, (2002).

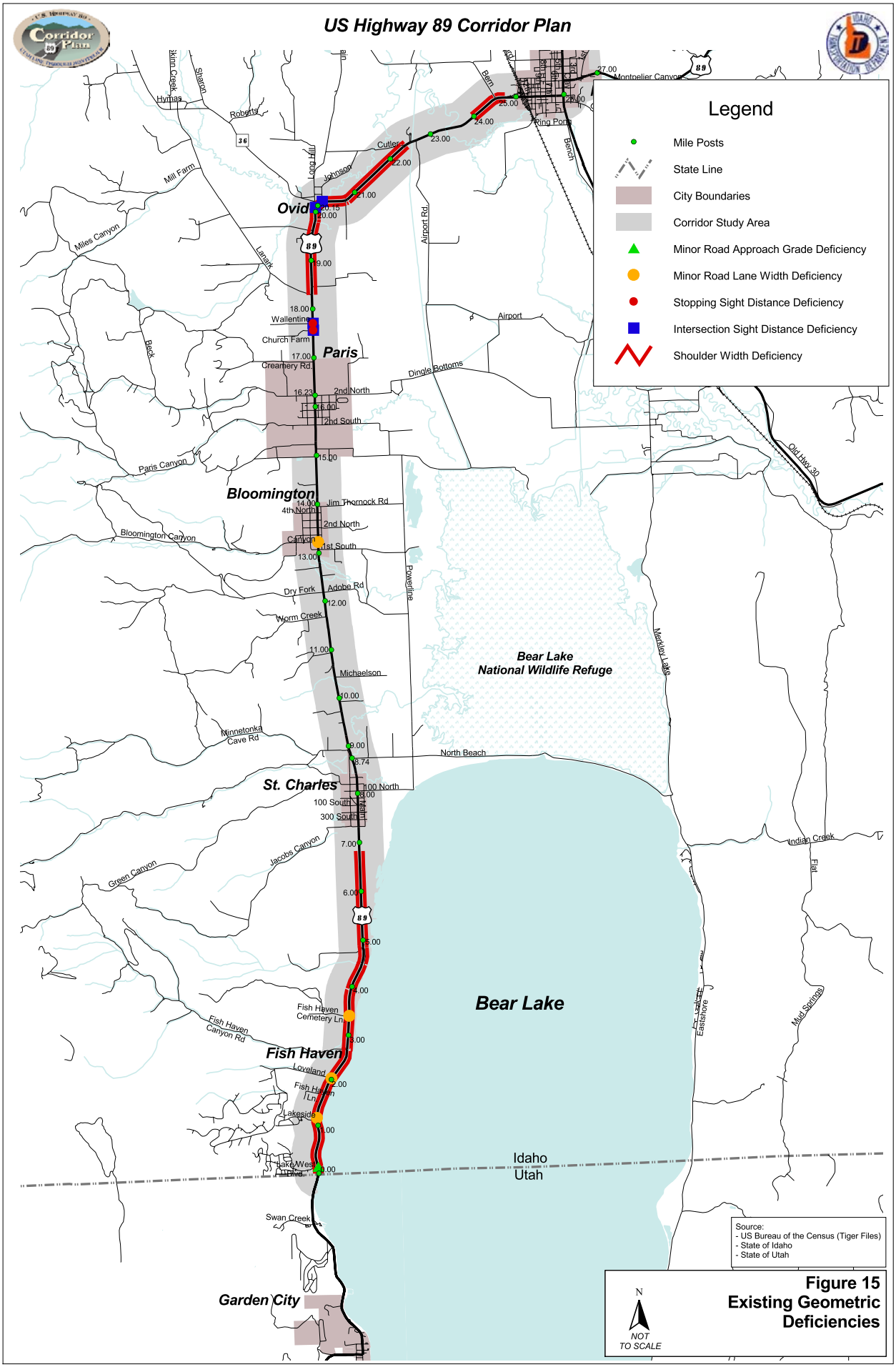
Table 9
Existing Lane and Shoulder Width Summary

From	To	Lane Width			Shoulder Width		
		Average Width	Standard	Def. ?	Average Width	Standard	Def. ?
Idaho-Utah state line	St. Charles s. city limit	12’	11’	N	4.5’	6’	Y
St. Charles s. city limit	300 South St. (St. Charles)	12’	11’	N	8.7’	6’	N
300 South St.	200 South St.	12’	11’	N	8.7’	3’	N
200 South St.	200 North St.	12’	10’	N	8.7’	2’	N
200 North St.	Bloomington Creek bridge	12’	11’	N	8.7’	3’	N
Bloomington Creek bridge	Bloomington n. city limit	12’	10’	N	8.7’	2’	N
Bloomington n. city limit	Paris Creek	12’	11’	N	8.7’	3’	N
Paris Creek	2nd South St. (Paris)	12’	11’	N	8.7’	6’	N
2nd South St. (Paris)	2nd North St.	12’	11’	N	Curbed		
2nd North St.	Creamery Rd.	12’	11’	N	8.7’	3’	N
Creamery Rd.	Lanark Rd.	12’	11’	N	3.5’	3’	N
Lanark Rd.	Ovid Creek bridge (s.)	12’	11’	N	3.5’	6’	Y
Ovid Creek bridge (s.)	Cutler Ln.	12’	11’	N	5.2’	6’	Y
Cutler Ln.	0.5 miles west of Bern Rd.	12’	11’	N	7.8’	6’	N
0.5 miles west of Bern Rd.	R.R. overpass (Montpelier)	12’	11’	N	4.1’	6’	Y
R.R. overpass	Clay St.	12’	11’	N	Curbed		
Clay St.	Montpelier e. city limit	12’	10’	N	3.2’	2’	N

Sources:

1. Average lane width: ITD GRAIL database
2. Average shoulder width: Field survey and ITD videologs


US Highway 89 Corridor Plan
Legend
Mile Posts
State Line
City Boundaries
Corridor Study Area
Lane Width - 12 Feet
Shoulder Width
3 to 6 feet
6 to 9 feet
9 to 12 feet
Curbed Shoulder
Montpelier
Ovid
Paris
Bloomington
St. Charles
Fish Haven
Garden City
Bear Lake
Bear Lake National Wildlife Refuge
Idaho
Utah
Source:
- US Bureau of the Census (Tiger Files)
- State of Idaho
- State of Utah
N
NOT TO SCALE
Figure 14
Existing Lane and Shoulder Widths


US Highway 89 Corridor Plan
Legend
Mile Posts
State Line
City Boundaries
Corridor Study Area
Minor Road Approach Grade Deficiency
Minor Road Lane Width Deficiency
Stopping Sight Distance Deficiency
Intersection Sight Distance Deficiency
Shoulder Width Deficiency
Ovid
Paris
Bloomington
St. Charles
Fish Haven
Garden City
Bear Lake
Bear Lake National Wildlife Refuge
Idaho
Utah
Montpelier Canyon
Ring Ports
Airport
Old Hwy 30
Indian Creek Flat
Mud Springs
Source:
- US Bureau of the Census (Tiger Files)
- State of Idaho
- State of Utah
N
NOT TO SCALE
Figure 15
Existing Geometric Deficiencies

Overall, shoulder width deficiencies exist for 43% of the total lane miles along the corridor and 45% of the total VMT.

In addition to lane and shoulder widths, an assessment of the horizontal alignment (curvature) of US 89 was made. This was done using information on horizontal alignment sufficiency contained in ITD's Highway Performance Monitoring System (HPMS). No deficiencies were identified within the HPMS database, nor through field survey. As mentioned earlier, the vertical alignment, or change in grade, along US 89 is not a significant issue, since the study area is located in relatively flat terrain.

Existing Bridge Geometrics

Geometric deficiencies for bridges along the corridor were identified by comparing existing bridge widths to ITD's bridge width standards,[18] shown in Table 10 below:

Table 10
ITD Bridge Width Standards

Bridge Length	AADT	Standard
Greater than 100 feet	All	Width of approach traffic lanes
Less than 100 feet	0 - 750	Width of approach traffic lanes
	750 – 2000	Width of approach traffic lanes plus 2 feet
	2000 - 4000	Width of approach traffic lanes plus 4 feet
	Over 4000	Width of approach traffic lanes plus 6 feet

Source: Source: ITD 2002 Design Manual, Appendix C

Based on these standards, deficiencies were found for the Ovid Creek (south) and Ovid Creek (east) bridges. While both bridges are at least as wide as the approach traffic lanes, there is less than two feet of additional width on either side of the lanes.

Existing Intersection Geometrics

Geometric deficiencies were analyzed for higher-volume intersections along US 89 and intersections with reported deficiencies. Intersection sight distance, stopping sight distance, and minor road approach grades and lane widths were compared to ITD standards for each location.

[18] Idaho Transportation Department, Highway Design Manual, (2002).

ITD's intersection and stopping sight distance standards are based on the recommendations contained in the American Association of State Highway and Transportation Officials' (AASHTO's) *A Policy on Geometric Design of Highways and Streets*.[19] The stopping sight distance standard is based on vehicle speed and the approach grade of the major road. Adequate stopping sight distance is required for drivers on the major road to stop if an obstruction appears on the road in front of them (e.g., another vehicle turning onto the roadway). The intersection sight distance standard is based on vehicle speed and the approach grade of the minor road. Adequate intersection sight distance is required for drivers turning from the minor road to clearly see oncoming traffic, turn into the traffic stream, and safely accelerate. The largest sight distance requirements are for drivers turning left from the minor road. Also, intersection sight distance requirements are larger than stopping sight distance requirements. Table 11 compares measured sight distances for the intersections along US 89 to the sight distance standards.

Approach lane widths for minor roads intersecting US 89 should be either 9 or 10 feet according to the *ITD Highway Design Manual*.[20] Based on these standards, lane width deficiencies were identified for Bloomington Canyon Rd., Fish Haven Cemetery Rd., Loveland Lane, and Lakeside Dr. Approach grades should be 3 percent or lower for all roadways.[21] The only road along US 89 not meeting this standard is Lake West Blvd.

Reported Existing Geometric Deficiencies

Geometric deficiencies were reported along a majority of the corridor (see Figure 16 and Appendix A). Between the Idaho-Utah state line and Fish Haven Cemetery Rd., the primary reported deficiencies were driveway approach grades that are too steep, narrow shoulder widths, and poor sight distance from driveways and intersections, particularly at the Fish Haven Canyon Rd. intersection. These conditions were confirmed through field survey, other than the poor sight distances. Sight distances were measured at the higher volume intersections in this area and found to meet ITD standards, with the exception of the Fish Haven Cemetery Rd. intersection, where sight distance can be a problem when vehicles are parked to the north and south of the intersection. With no parked vehicles, sight distance standards are met at this location.

Poor intersection sight distance was also a reported deficiency for the eastbound approach of the US 89/North Beach Rd. intersection. Measured sight distances for both directions on this approach were found to meet ITD standards, however.

[19] AASHTO, A Policy on the Geometric Design of Highways and Streets, (2001).
[20] Idaho Transportation Department, Highway Design Manual, (2002).
[21] AASHTO, A Policy on the Geometric Design of Highways and Streets, (2001).

Table 11
Existing Sight Distance Summary
US 89 Intersections

Location	Speed Limit* (mph)	Measured Sight Dist.**	Stopping Sight Distance			Intersection Sight Distance		
			Movement	Standard	Def. ?	Movement	Standard	Def. ?
US 89/ Lake West Blvd.	50	~600’	SB	425'	No	EB LT	555’	No
	50	>800’	NB	425'	No	EB LT	555’	No
US 89/ Lakeside Dr.	50	>800’	SB	425'	No	EB LT	555’	No
	50	>800’	NB	425'	No	EB LT	555’	No
US 89/ Loveland Ln.	50	>800’	SB	425'	No	EB LT	555’	No
	50	>800’	NB	425'	No	EB LT	555’	No
US 89/ Fish Haven Canyon Rd.	35	>800’	SB	250'	No	EB LT	390’	No
	35	>800’	NB	250'	No	EB LT	390’	No
US 89/ Fish Haven Cemetery Rd.	65	>800’	SB	645'	No	EB LT	720’	No
	65	>800’	NB	645'	No	EB LT	720’	No
US 89/ North Beach Rd.	55	>800’	SB	495'	No	WB LT	610’	No
	55	>800’	NB	495'	No	WB LT	610’	No
US 89/ Church Farm Rd.	65	~500’	SB	645'	Yes	EB LT	720’	Yes
	65	>800’	NB	645'	No	EB LT	720’	No
US 89/ Wallentine Rd.	65	>800’	SB	645'	No	EB LT	720’	No
	65	~500’	NB	645'	Yes	EB LT	720’	Yes

Table 11 (cont.)
Existing Sight Distance Summary
US 89 Intersections

Location	Speed Limit* (mph)	Measured Sight Dist.**	Stopping Sight Distance			Intersection Sight Distance		
			Movement	Standard	Def. ?	Movement	Standard	Def. ?
US 89/ Lanark Rd.	65	>800’	SB	645'	No	EB LT	720’	No
	65	>800’	NB	645'	No	EB LT	720’	No
US 89/ Ovid corner (s.)	45	~450’	WB	360'	No	SB RT	500’	Yes
	45	>800’	EB	360'	No	SB RT	500’	No
US 89/ Ovid corner (n.)	45	>800’	WB	360'	No	EB LT	500’	No
	45	~450’	NB	360'	No	EB LT	500’	Yes

* Sight distance standards are based on the traveled speed of the roadway. When 85th percentile speeds are available, they should be used. Otherwise, posted speeds that adequately represent the 85th percentile speeds are used.

** Stopping sight distance and intersection sight distance are measured using the same parameters. They differ by the beginning reference point (driver on the major road for stopping sight distance and driver on the minor road driver for intersection sight distance). Therefore, the same field measurement was applied for both cases.

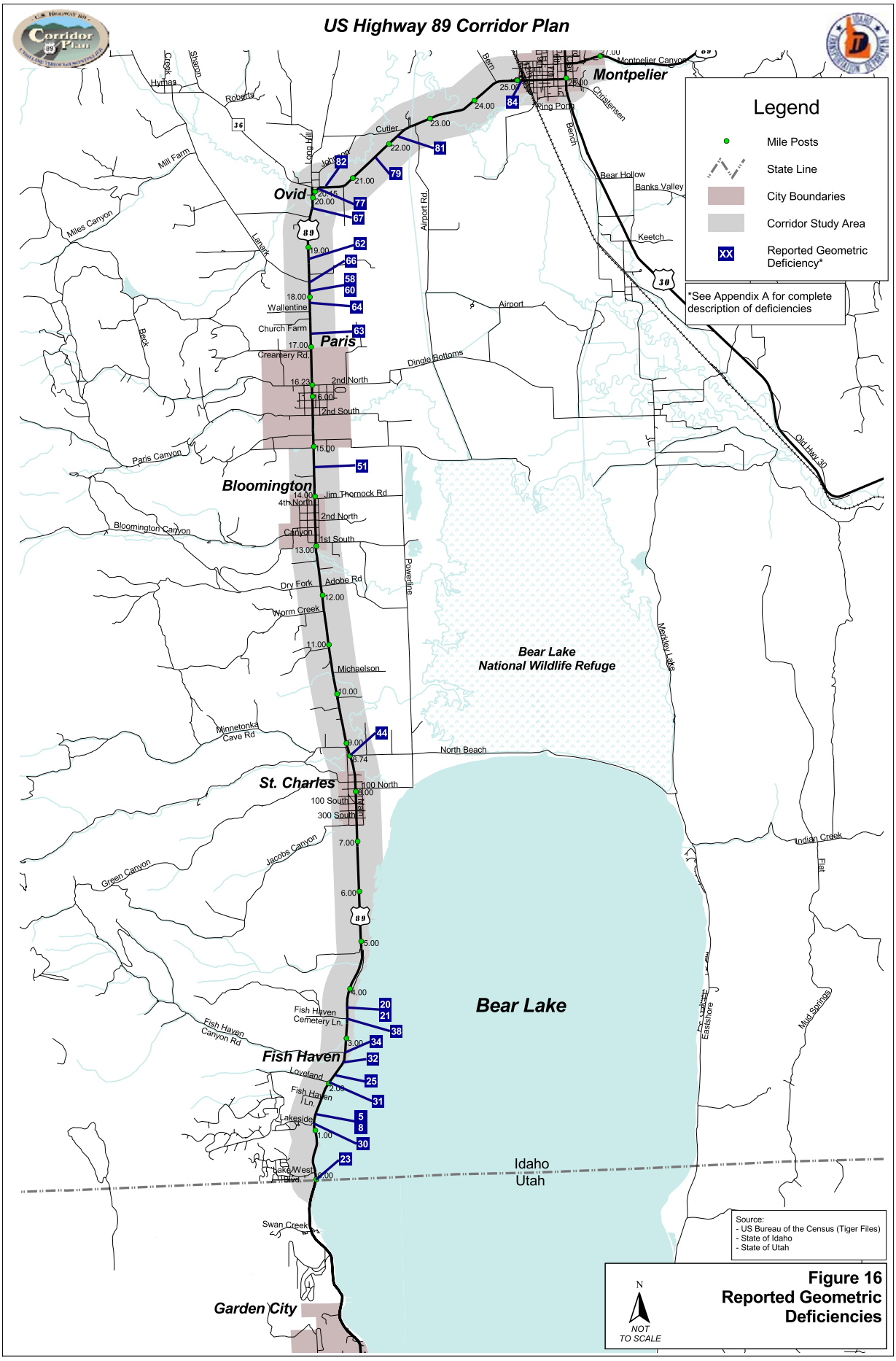


Figure 16
Reported Geometric Deficiencies

A relatively large number of geometric deficiencies were also reported for the segment between Paris and the Ovid corner (north) intersection. Most of these were related to narrow shoulder widths and sight distance problems at several locations. Shoulder width deficiencies were found between Lanark Rd. and the Ovid corner (north) intersection. Intersection and stopping sight distance deficiencies caused by vertical curves along US 89 were also found at Wallentine Rd. and Church Farm Rd. north of Paris. Although intersection and stopping sight distance standards are met at Lanark Rd., another type of sight distance problem exists here. Because this intersection is located at the crest of a vertical curve on US 89, northbound drivers who start their left-turn onto Lanark Rd. prior to the curve have difficulty seeing oncoming southbound vehicles. This problem is exacerbated by the higher speeds (65 mph speed limit) in this area.

Along the remainder of the corridor, the primary reported deficiency was narrow shoulder widths between the Ovid corner (north) intersection and Montpelier. Narrow shoulder widths were identified within this section between the Ovid corner (north) intersection and Cutler Ln.

Existing Bicycle and Pedestrian Conditions

EXISTING BICYCLE AND PEDESTRIAN FACILITIES

Existing sidewalks and off-street trails within the corridor study area are shown in Figure 17. There are sidewalks along US 89 in Paris and Montpelier, where curb and gutter-type construction exist. There are no striped bike lanes at any point along US 89. Off-street trails connect Lake West Boulevard in the Fish Haven area to Swan Creek in Utah.

EXISTING BICYCLE AND PEDESTRIAN VOLUMES

Bicycle and pedestrian volumes were counted as part of the vehicle turning movement counts conducted in July 2002. Design hour bicycle and pedestrian volumes at each of the study intersections are shown in Figure 18. As can be seen, this activity is concentrated primarily in the developed areas, such as Fish Haven and Montpelier. Because of the recreational and scenic character of the study area, however, another component of bike travel demand is longer-distance, through bike trips between points north and south of the area.

COMMITTED AND PLANNED BICYCLE AND PEDESTRIAN IMPROVEMENTS

No specific bicycle or pedestrian improvements are included for the corridor in ITD's Statewide Transportation Improvement Plan.[22] There has been local discussion, however, about the possibility of constructing an off-street trail in the Fish Haven area extending

[22] Idaho Transportation Department, Statewide Transportation Improvement Program, (2002).

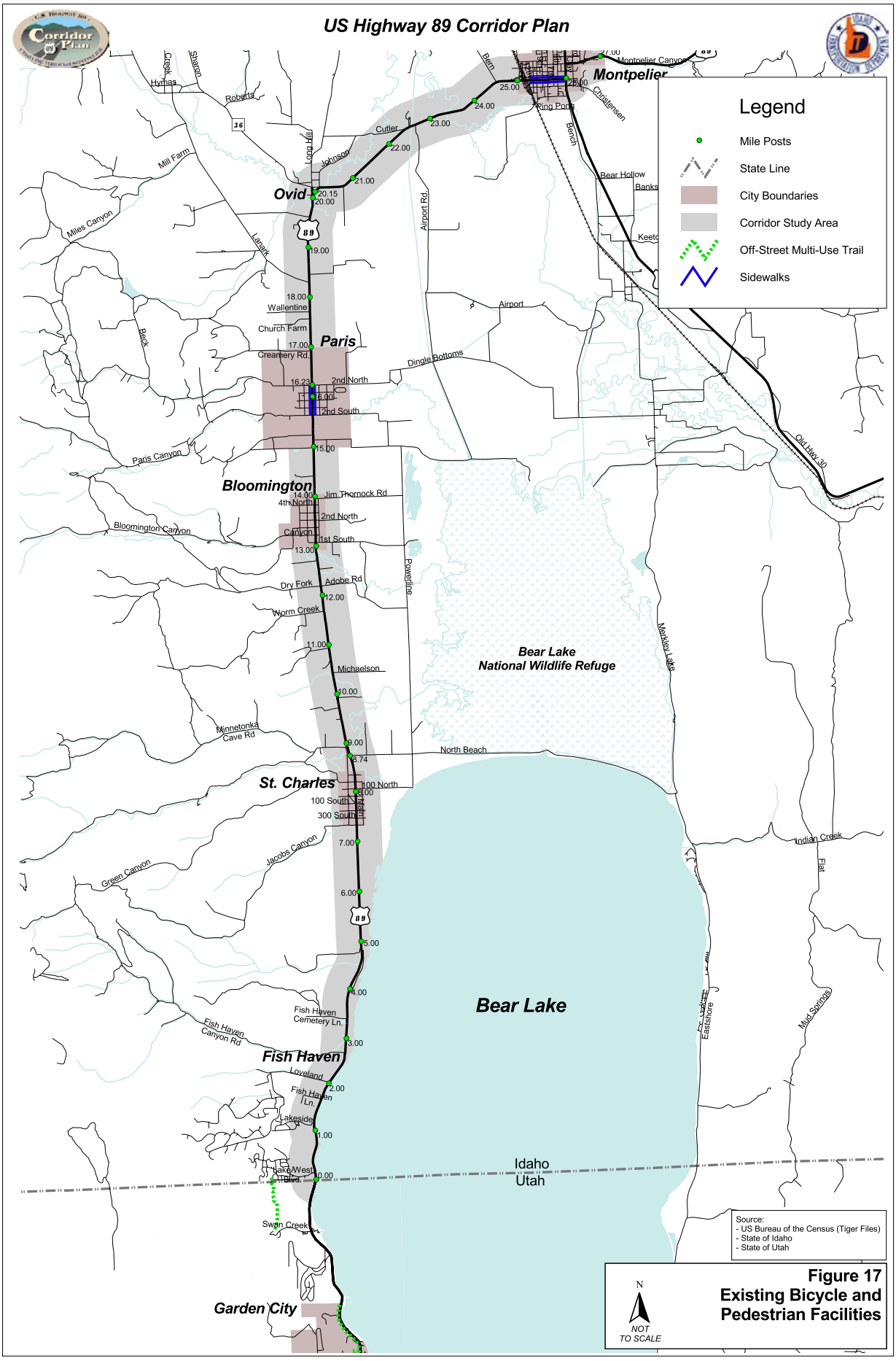


Figure 17
Existing Bicycle and Pedestrian Facilities

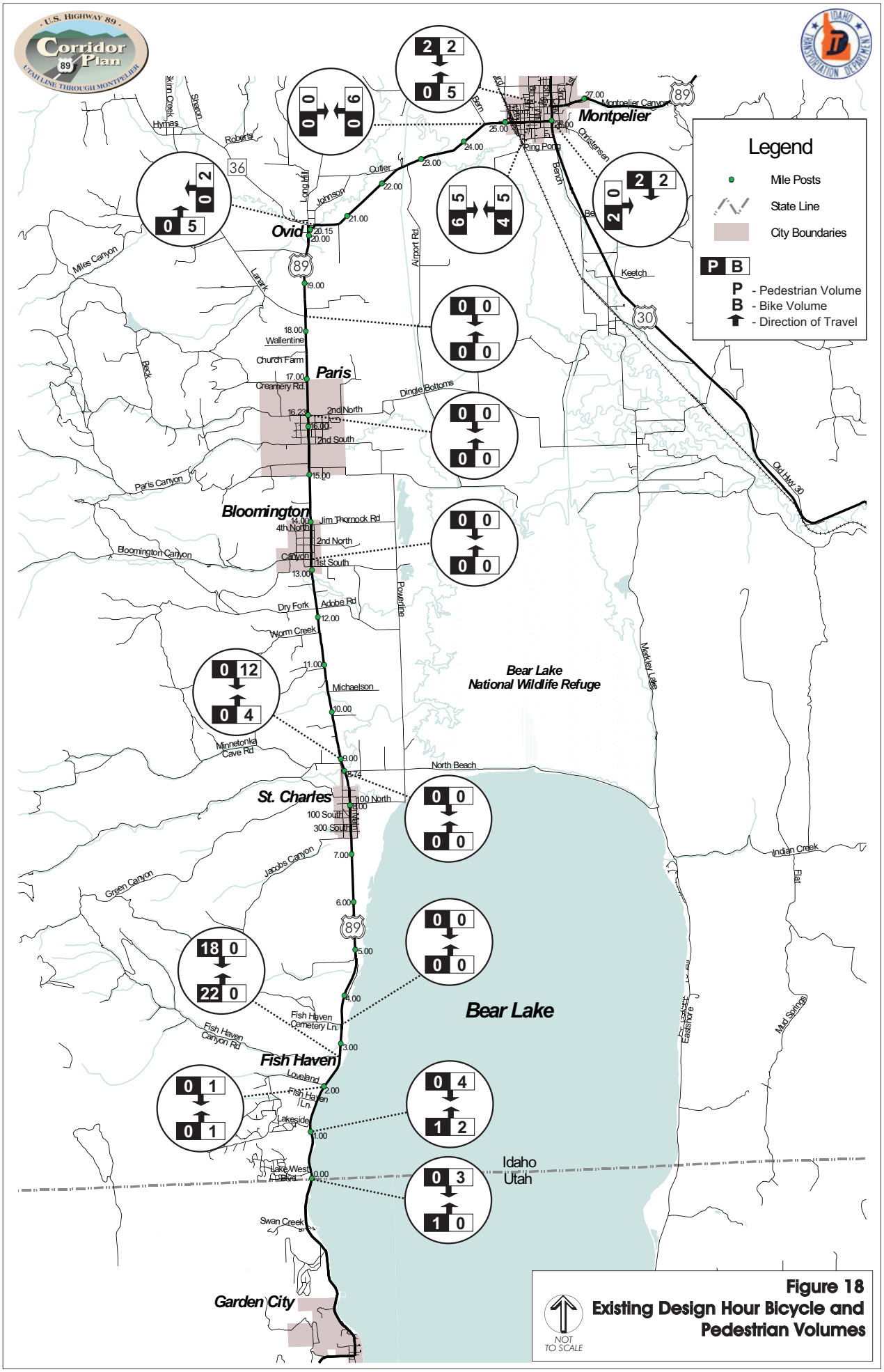


Figure 18
Existing Design Hour Bicycle and Pedestrian Volumes

south to the existing trail at Lake West Blvd. and north to the North Beach recreational area.[23] In addition, the Bear Lake County Comprehensive Plan[24] identifies a bicycle path around Bear Lake as an issue for consideration.

EXISTING BICYCLE AND PEDESTRIAN NEEDS

ITD policy requires that bicycle and pedestrian facilities be considered along recreational routes.[25] Based on the existing bicycle travel demand not only in the Fish Haven area but along the entire corridor, some type of bicycle facility is needed. In some areas, this could be in the form of a shoulder bikeway along US 89, while in other areas a separate bicycle path may be more appropriate.

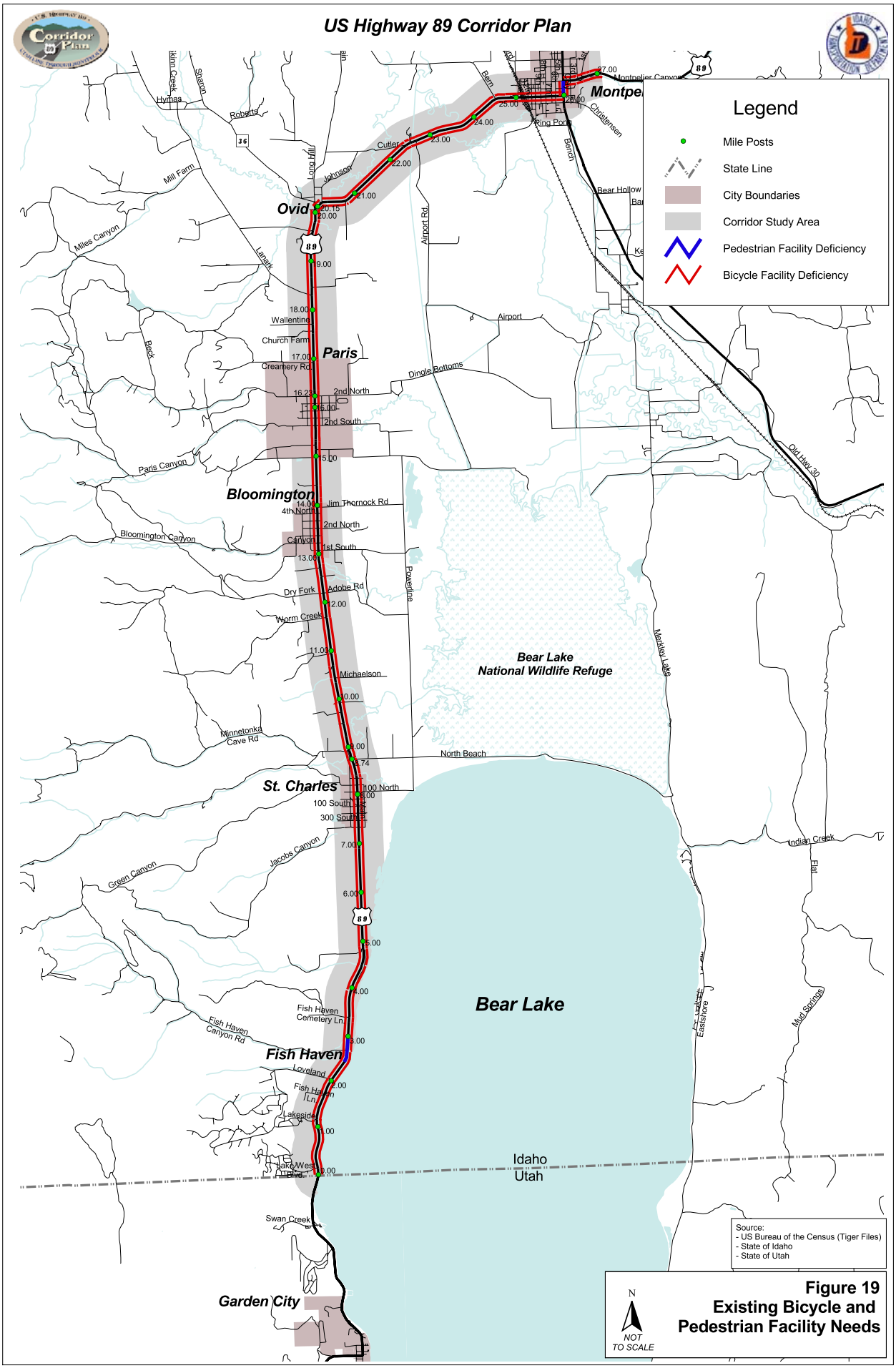
ITD's policy for the construction of pedestrian facilities contained in the *Idaho Bicycle and Pedestrian Plan*[26] states that "pedestrian paths in suburban or rural areas shall be considered when a need is shown, such as proximity to schools or recreation areas". Along the corridor, all of the schools are located outside of the rural area in the communities of Paris and Montpelier. In the Bear Lake area, however, there are several attractions, including the North Beach and Lake West Beach recreational areas and a small commercial area in Fish Haven at the intersection of US 89/Fish Haven Canyon Rd.. A typical pedestrian walking distance of ¼ mile was used to determine the need for pedestrian connections to these attractions. No deficiencies were found for the beach areas, since for North Beach there is no residential development within walking distance, and for Lake West Beach all of the nearby housing is directly served by private lake access. A deficiency was identified, however, for the commercial area in Fish Haven, because there are no pedestrian facilities connecting it to the nearby recreational housing development.

Additionally, there is a lack of pedestrian facilities along US 89/US 30 in Montpelier between Washington St. and Clay St. This may be considered as a deficiency because of the commercial character of this area.

Figure 19 shows the existing bicycle and pedestrian facility deficiencies along the corridor.

There were also several reported bicycle and pedestrian deficiencies along US 89 between the Idaho-Utah state line and Paris (see Figure 20 and Appendix A). In the Fish Haven area, these include the need for a bike facility extending south to the existing bike trail at Lake West Blvd. and north to North Beach Rd. (or beyond). A reported location

[23] Conversation with Craig Thomas, Bear Lake Regional Commission, April 2002.
[24] Bear Lake County Planning and Zoning Commission, Bear Lake County Comprehensive Plan 2025, (2002).
[25] Idaho Transportation Department, Idaho Bicycle and Pedestrian Plan, (1995).
[26] Idaho Transportation Department.


US Highway 89 Corridor Plan
Legend
Mile Posts
State Line
City Boundaries
Corridor Study Area
Pedestrian Facility Deficiency
Bicycle Facility Deficiency
Montpelier
Ovid
Paris
Bloomington
St. Charles
Fish Haven
Garden City
Bear Lake
Bear Lake National Wildlife Refuge
Idaho
Utah
Source:
- US Bureau of the Census (Tiger Files)
- State of Idaho
- State of Utah
N
NOT TO SCALE
Figure 19
Existing Bicycle and Pedestrian Facility Needs

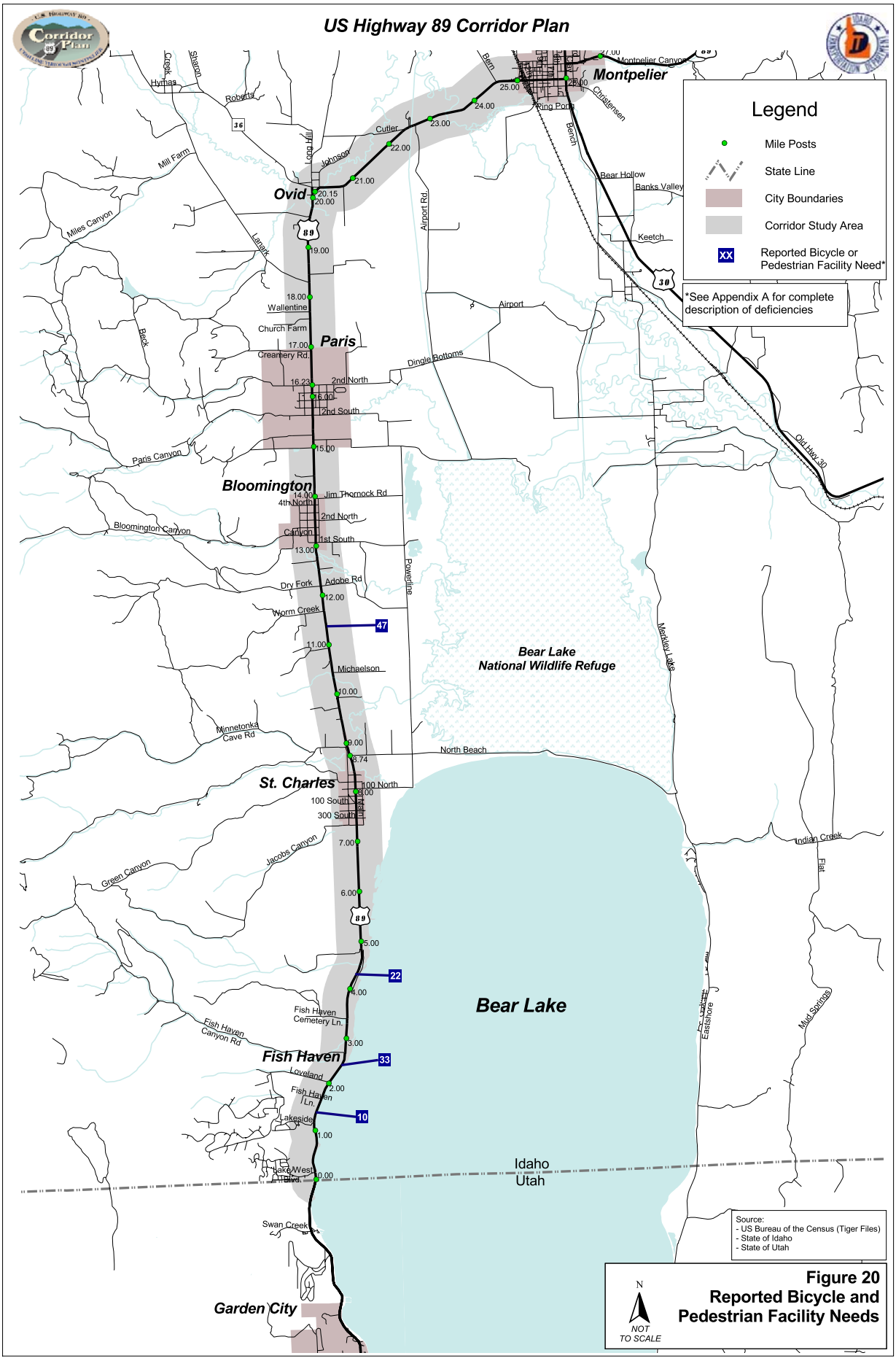


Figure 20
Reported Bicycle and Pedestrian Facility Needs

deficiency was the need for a wider bridge at Fish Creek in Fish Haven to safely accommodate bicyclists and pedestrians.

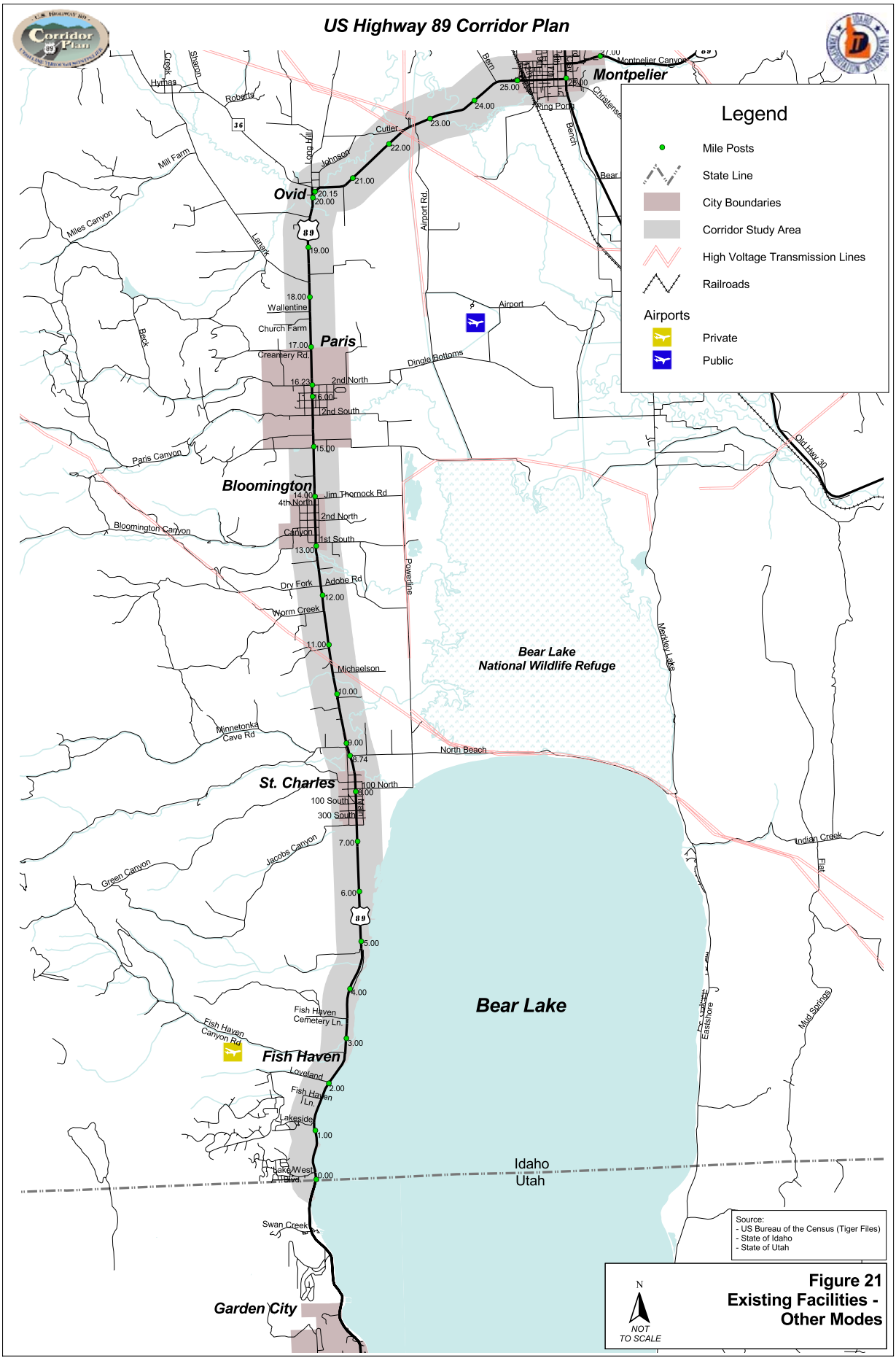
Existing Conditions for Other Modes

Other transportation modes within the corridor study area are rail, air, water, and power transmission lines. They primarily support the movement of goods rather than people.

Facility locations for these modes are shown in Figure 21. Union Pacific operates a freight rail line that passes beneath US 89 on the west side of Montpelier. This is one of the main rail lines in the state, connecting through southern Idaho to Oregon and Wyoming. It carries over 20 million gross ton miles of freight annually, comprised primarily of non-metallic minerals and chemical products derived from the phosphate mining and chemical production activity in the area, as well as farm products.[27] The Bear Lake County airport is a general aviation airport located three miles east of Paris. It has four runways and serves an average of 84 aircraft operations per week.[28] Additionally, there is a private airstrip located near Fish Haven off of Fish Haven Canyon Rd. that is owned by the Lazy M Ranch but currently not used. There are two major high-voltage transmission lines entering Bear Lake County from Wyoming that cross US 89 between St. Charles and Bloomington and between Ovid corner and Montpelier. Bear Lake is the only navigable waterway within the study area and serves recreational boat use only.

No existing needs or committed or planned improvements were identified in the *Idaho Transportation Plan*[29] or specific modal plans for any of these other modes.

[27] Idaho Transportation Department, Idaho State Rail Plan, (1996).
[28] AirNav, LLC, (2003), airport information, URL: http://airnav.com/airports/, visited January 22, 2002.
[29] Idaho Transportation Department, Idaho Transportation Plan, (1995).


US Highway 89 Corridor Plan
Legend
Mile Posts
State Line
City Boundaries
Corridor Study Area
High Voltage Transmission Lines
Railroads
Airports
Private
Public
Montpelier
Ovid
Paris
Bloomington
St. Charles
Fish Haven
Garden City
Bear Lake
Bear Lake National Wildlife Refuge
Idaho
Utah
Source:
- US Bureau of the Census (Tiger Files)
- State of Idaho
- State of Utah
N
NOT TO SCALE
Figure 21
Existing Facilities -
Other Modes

Future Transportation Conditions

Future Roadway Conditions

TRAFFIC PROJECTIONS

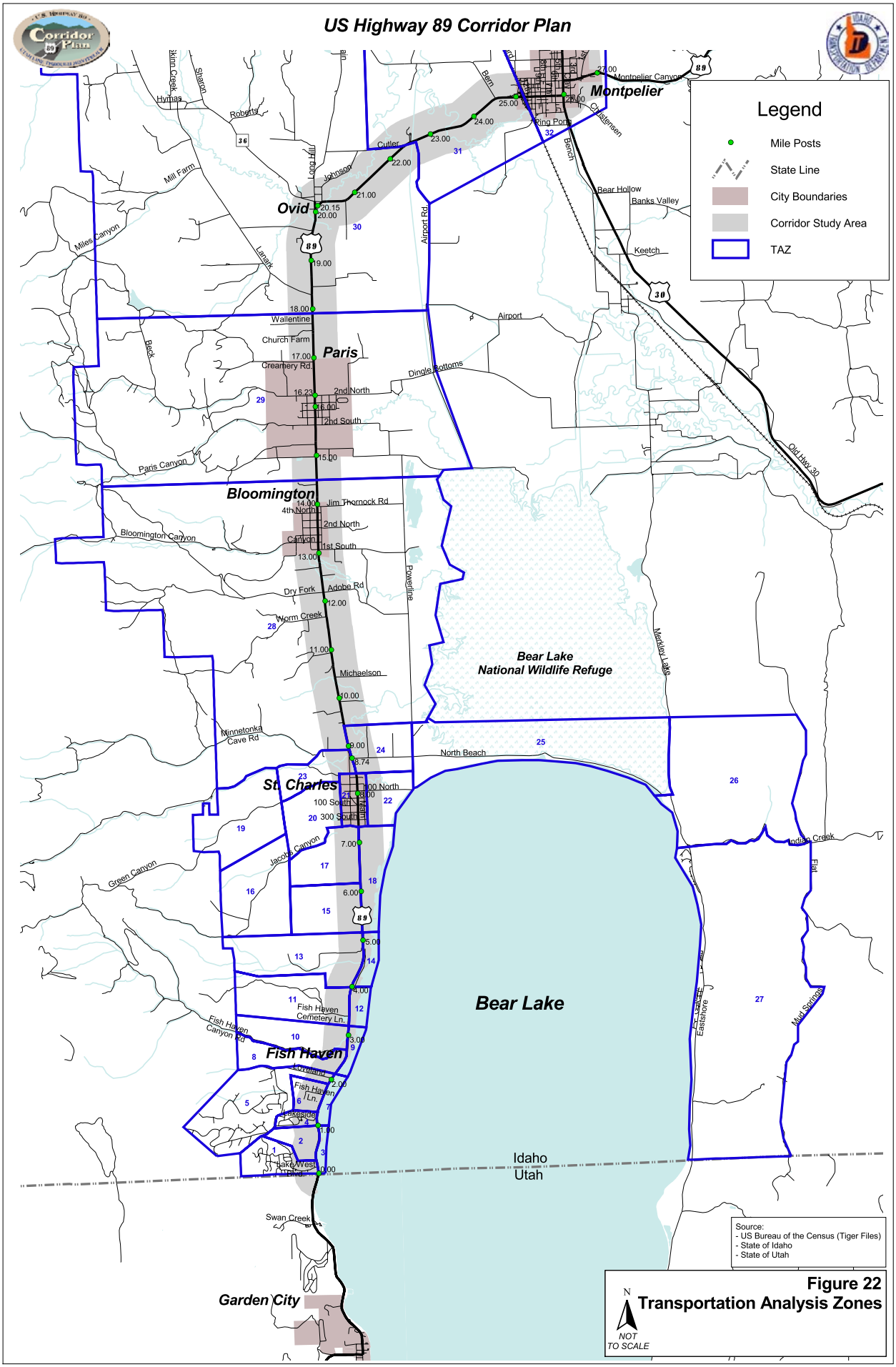
Travel demand forecasts were required for the determination of future transportation system needs along the US 89 corridor. A key element in the development of the forecasts were estimates of 2025 population, employment, and housing units for Bear Lake County. As described in Section III., these estimates were based on an assessment of future land use potential developed using information from the Bear Lake County Comprehensive Plan, Census data, and Bear Lake County residential development approvals. For the purpose of the traffic forecasts, the countywide population and employment estimates were allocated to individual transportation analysis zones (TAZs) for the study area, as shown in Figure 22.

The future year population and employment estimates were used to calculate TAZ growth rates. These growth rates were examined to determine the most appropriate travel forecasting method to be used. To the north of Bear Lake, it appears that future growth will occur at a similar rate to the historical growth in the area. Therefore, future traffic volumes along US 89 (and intersecting roads) to the north of St. Charles were estimated using historical traffic growth rates. Along the majority of this section of US 89, a historical growth rate of less than 1 percent per year was used. Where US 89 shares right-of-way with US 30 between Washington St. and Clay St. in Montpelier, an average annual growth rate of approximately 3% was applied, based on historical traffic counts for US 30. These growth rates, applied to the existing traffic volumes, account for growth in both local trips and regional traffic passing through the corridor.

Future growth rates in the Bear Lake area are expected to exceed the historical growth rates in the area. A large number of recreational housing units are planned around Bear Lake, including the Fish Haven area on the west shore, the Garden City area in Utah, and the east shore area. Therefore, to accurately forecast future traffic volumes in this area, a detailed traffic model covering the Bear Lake area (TAZs 1 - 27) was created.

The traffic model incorporates three different vehicle trip types:

- Trips produced within the Bear Lake area - these are internal-internal (I-I) and internal-external (I-X) trips;
- Trips produced outside of Bear Lake area destined to one of the TAZs within the Bear Lake area – these are external-internal (X-I) trips; and


US Highway 89 Corridor Plan
Legend
Mile Posts
State Line
City Boundaries
Corridor Study Area
TAZ
Montpelier
Ovid
Paris
Bloomington
St. Charles
Fish Haven
Garden City
Bear Lake
Bear Lake National Wildlife Refuge
Idaho
Utah
Source:
- US Bureau of the Census (Tiger Files)
- State of Idaho
- State of Utah
Figure 22
Transportation Analysis Zones
N
NOT TO SCALE

- Trips with an origin and destination outside of the Bear Lake area that pass through via US 89 – these are external-external (X-X) trips.

Each of the trip types was modeled differently. The proportionate share of total traffic volume for each trip type was calibrated within a base year (2002) version of the model using existing traffic count data. A complete description of the traffic forecasting model development may be found in Appendix D.

Trip generation for I-I and I-X trips was forecast for each TAZ based on the number of future housing units and the appropriate trip rate from the *ITE Trip Generation Manual*.[30] These trips were distributed according to the relative attractiveness of the other TAZs, as determined by the level of recreational and retail activity and number of housing units within the TAZs. The future year trip distribution was established by adjusting the base year distribution to reflect future changes in the relative attractiveness of the TAZs. For example, shopping trips that today may be destined for Montpelier could, in the future, utilize future retail developments in St. Charles or Bear Haven, thus reducing the relative attractiveness of the Montpelier TAZ. Table 12 presents the base year and 2025 distributions that were used to assign trips produced by residential development in the Bear Lake area.

Table 12
Distribution Percentages for I-I, I-X Trips

Destination	TAZ	Base Year Percentage	2025 Percentage
South external station (Utah)	N/A	56%	51%
Bear Lake West	1	3%	3%
Lake West Beach	3	2%	2%
Fish Haven Ln.	6	0%	2%
Fish Haven	8	3%	2%
Bear Haven East	12	0%	3%
Bear Haven West	11	0%	6%
St. Charles	21	3%	3%
North Beach retail	24	2%	2%
North Beach recreation	25	18%	18%
Minnetonka Cave	23	3%	3%
North external station (n/o St. Charles)	N/A	10%	5%
Total		**100%**	**100%**

[30] Institute of Transportation Engineers, Trip Generation 6th Edition, (1997).

The X-I trips were comprised of two components. First, trips destined to internal households were forecast following the same procedure used for trips produced by internal households. Second, trips destined to retail or recreational areas were estimated based on historical traffic growth rates at the north and south ends of the corridor. Trips from the north were forecast using the same growth rate described earlier for the area north of Bear Lake (less than 1 percent per year). Trips from the south were forecast using a more recent growth rate (1995 to 2001) that captures the growth trend of traffic from Garden City and other Utah population centers (approximately 5 percent per year).

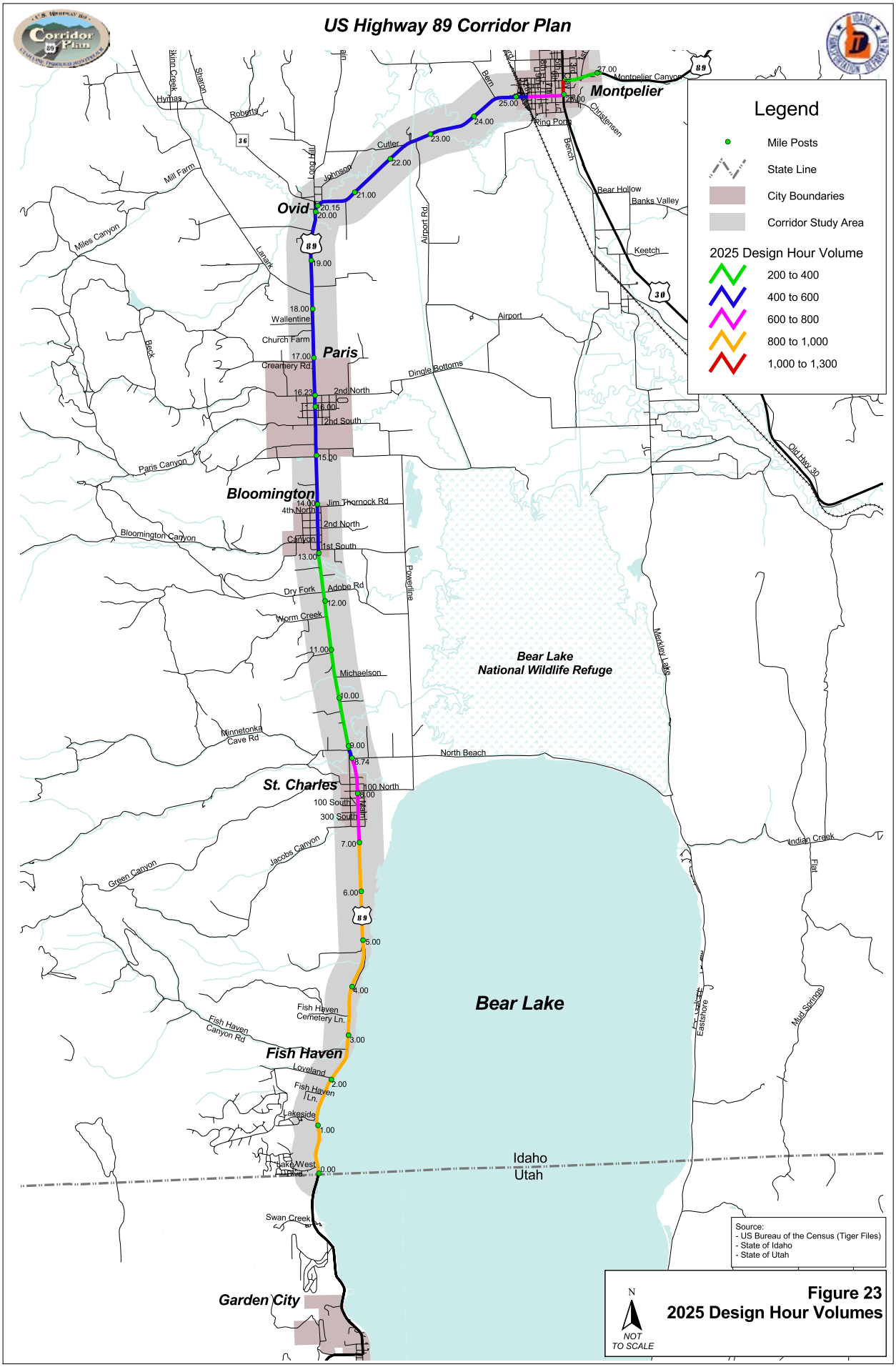
The X-X trips on US 89 were also estimated using the growth rate for the area north of Bear Lake (less than 1 percent per year).

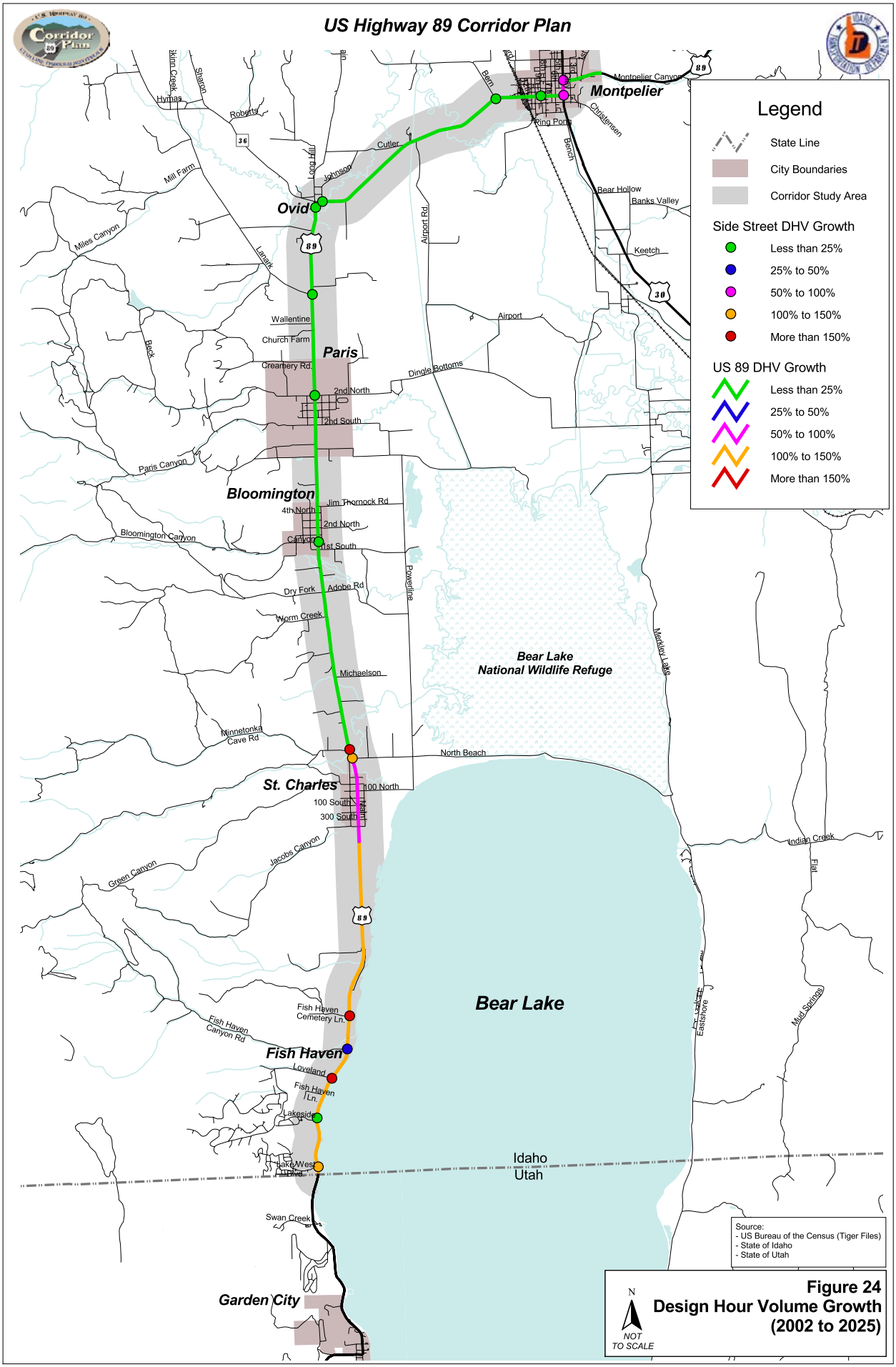
FUTURE TRAFFIC VOLUMES

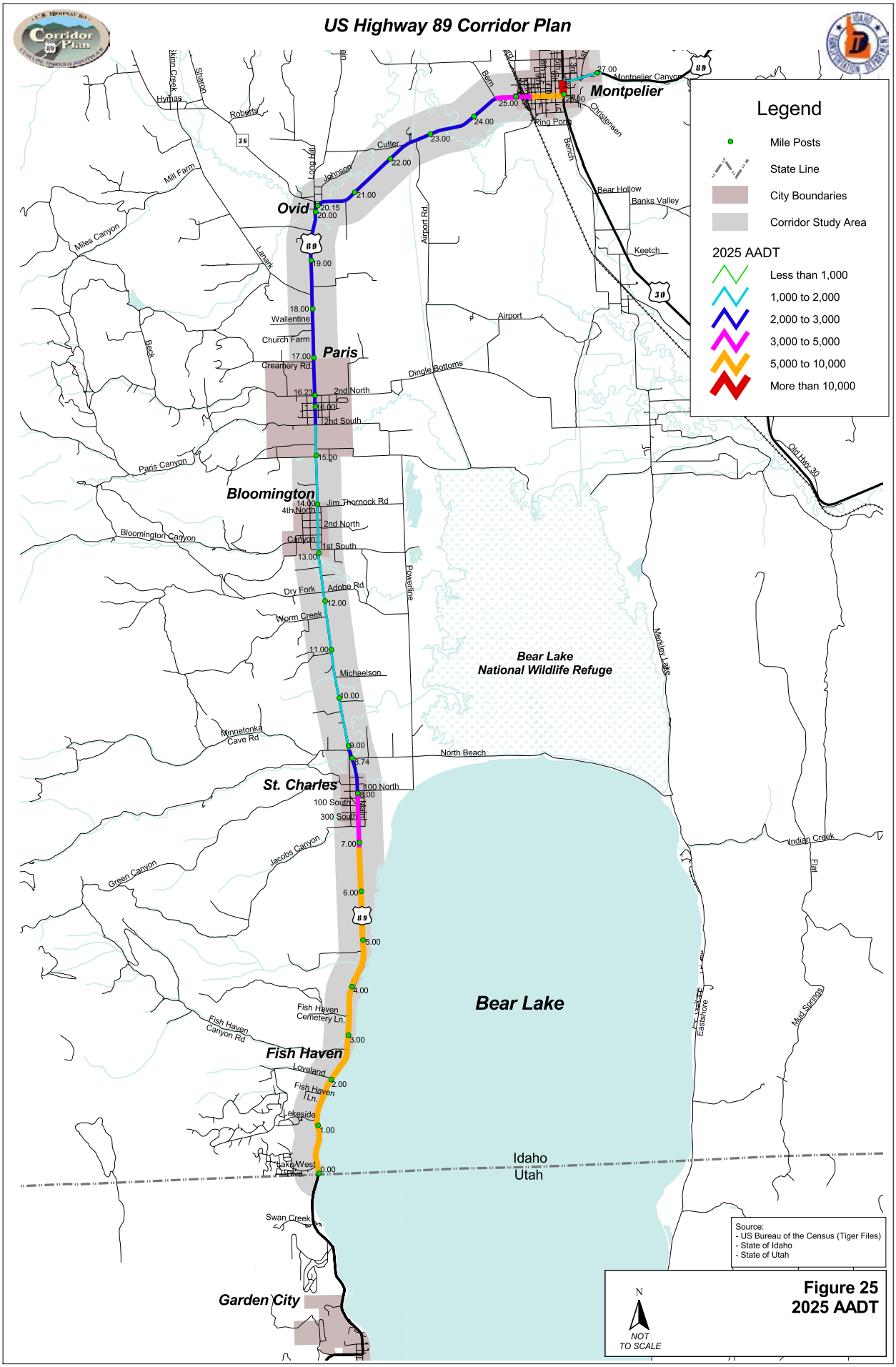
Estimated 2025 DHVs along US 89 within the study area are shown in Figure 23. Comparison of these volumes with the existing volumes shown in Figure 7 indicates that the highest traffic growth will occur south of North Beach Rd. in the Bear Lake area. In the St. Charles/North Beach Rd. area, volumes nearly double to roughly 700 vph, and to the south of St. Charles, they more than double to 800 – 1,000 vph. This is primarily due to the significant increase in recreational housing in the area, as well as growth in through traffic volumes. These traffic growth rates are summarized in Figure 24. Also shown in Figure 24 are traffic growth rates for intersecting roads with US 89. The increased traffic volumes on US 89 associated with these roads reflects the corresponding increase in anticipated future development or activity levels within the areas they serve. Intersecting roads in the Bear Lake area with higher traffic growth rates (50% or more) are Bear Lake West Blvd., Loveland Ln., Fish Haven Cemetery Ln., and North Beach Rd.

Along the remainder of the corridor, 2025 DHVs increase by about only 15% compared to existing volumes, reflecting the low levels of expected housing and employment growth in these areas and the low historical traffic growth rate. The only exception to this is the segment between Washington St. and Clay St. in Montpelier, where volumes increase by about 55% from 800 vph to 1,250 vph. This small segment of the corridor is also a part of US 30, which has a significantly higher historical traffic growth rate than US 89.

Figure 25 shows 2025 AADT volumes along US 89. These volumes were estimated using growth rates derived from the DHV forecasts. Thus, the pattern of future traffic growth is the same as that for the design hour volumes, with the highest increases occurring on the south end of the corridor and low growth occurring along the remainder of the corridor. In the Bear Lake area, future AADT volumes vary by location from 5,000 – 10,000 vpd. Volumes between the Bear Lake area and Montpelier remain


US Highway 89 Corridor Plan
Legend
Mile Posts
State Line
City Boundaries
Corridor Study Area
2025 Design Hour Volume
200 to 400
400 to 600
600 to 800
800 to 1,000
1,000 to 1,300
Montpelier
Ovid
Paris
Bloomington
St. Charles
Fish Haven
Garden City
Bear Lake
Bear Lake National Wildlife Refuge
Idaho
Utah
Source:
- US Bureau of the Census (Tiger Files)
- State of Idaho
- State of Utah
N
NOT TO SCALE
Figure 23
2025 Design Hour Volumes


US Highway 89 Corridor Plan
Legend
State Line
City Boundaries
Corridor Study Area
Side Street DHV Growth
Less than 25%
25% to 50%
50% to 100%
100% to 150%
More than 150%
US 89 DHV Growth
Less than 25%
25% to 50%
50% to 100%
100% to 150%
More than 150%
Montpelier
Montpelier Canyon
Ovid
Paris
Wallentine
Church Farm
Creamery Rd
2nd North
2nd South
Dingle Bottoms
Airport
Airport Rd
Bloomington
4th North
Jim Thornock Rd
2nd North
1st South
Canyon
Bloomington Canyon
Paris Canyon
Dry Fork
Adobe Rd
Worm Creek
Powerline
Michaelson
Ninnetonka Cave Rd
Bear Lake National Wildlife Refuge
Merkley Lake
North Beach
St. Charles
100 North
100 South
300 South
Main
Jacobs Canyon
Green Canyon
Bear Lake
Fish Haven Cemetery Ln.
Fish Haven Canyon Rd
Fish Haven
Loveland
Fish Haven Ln.
Lakeside
Lake West
Idaho
Utah
Swan Creek
Garden City
Indian Creek
Flat
Mud Springs
East Lake Shore
Bench
Ring Point
Christensen
Bear Hollow
Banks Valley
Keetch
Cutler
Johnson
Mill Farm
Miles Canyon
Lanark
Back
Hymas
Roberts
Sharon
Bern
Source:
- US Bureau of the Census (Tiger Files)
- State of Idaho
- State of Utah
N
NOT TO SCALE
Figure 24
Design Hour Volume Growth
(2002 to 2025)


US Highway 89 Corridor Plan
Legend
Mile Posts
State Line
City Boundaries
Corridor Study Area
2025 AADT
Less than 1,000
1,000 to 2,000
2,000 to 3,000
3,000 to 5,000
5,000 to 10,000
More than 10,000
Montpelier
Ovid
Paris
Bloomington
St. Charles
Fish Haven
Garden City
Bear Lake
Bear Lake National Wildlife Refuge
Idaho
Utah
Source:
- US Bureau of the Census (Tiger Files)
- State of Idaho
- State of Utah
N
NOT TO SCALE
Figure 25
2025 AADT

relatively low, in the range of 1,000 – 3,000 vpd. In Montpelier, future volumes are roughly 7,000 vpd along Washington St. and 13,500 vpd along 4th St. To the east of 4th St., volumes drop sharply to 1,000 –2,000 vpd. It is interesting to note that with the significant increases in development and recreational activity assumed in the Bear Lake area, future traffic volumes (5,000 – 6,500 vpd) are forecast to be within the same general category as those along Washington St. in Montpelier (7,000 vpd).

FUTURE ROADWAY NEEDS

Future Capacity and Level of Service

As for existing conditions, future capacity and level of service deficiencies were identified for all road segments and higher-volume intersections along US 89 by comparing future LOS estimates to the LOS standards. This analysis was performed for a "No-Build" network scenario, in which only the signalization improvement at the intersection of Washington St./4th St. in Montpelier was assumed.

Future LOS on Roadway Segments

Segment LOS estimates were developed using the 2025 DHV forecasts and the same methodologies described for the existing conditions analysis. A different segment definition and LOS estimation methodology were used for two of the segments in the Bear Lake area, however, to reflect the changing character of development by 2025. For the segment between Fish Haven and St. Charles, the HIGHPLAN methodology for rural developed areas was considered more appropriate for use than the *HCM2000* rural two-lane highway analysis technique because of the increased development levels near the highway, including the proposed Bear Haven development near Fish Haven Cemetery Lane (see Section III.). Similarly, the rural developed designation was extended to the north of St. Charles to reflect the higher levels of development anticipated between St. Charles and North Beach Rd.

The results of the roadway segment LOS analysis are shown in Figure 26 and Table 13. Comparison of these results to the existing LOS estimates shown in Figure 8 and Table 13 indicate a general degradation in LOS along segments to the south of North Beach Rd. and maintenance of existing levels of service along the remainder of the corridor to the north. This is consistent with the overall pattern of future traffic growth described in the previous section, in which volumes increase significantly in the Bear Lake area but grow only moderately in the other areas.

Within the Fish Haven area, the 2025 LOS is generally two levels lower than the existing LOS. Between Fish Haven and North Beach Rd., the future LOS drops by one level. The only other segment along the corridor with a change in the level of service is in Montpelier, where the LOS in the westbound/southbound direction decreases from "B" to

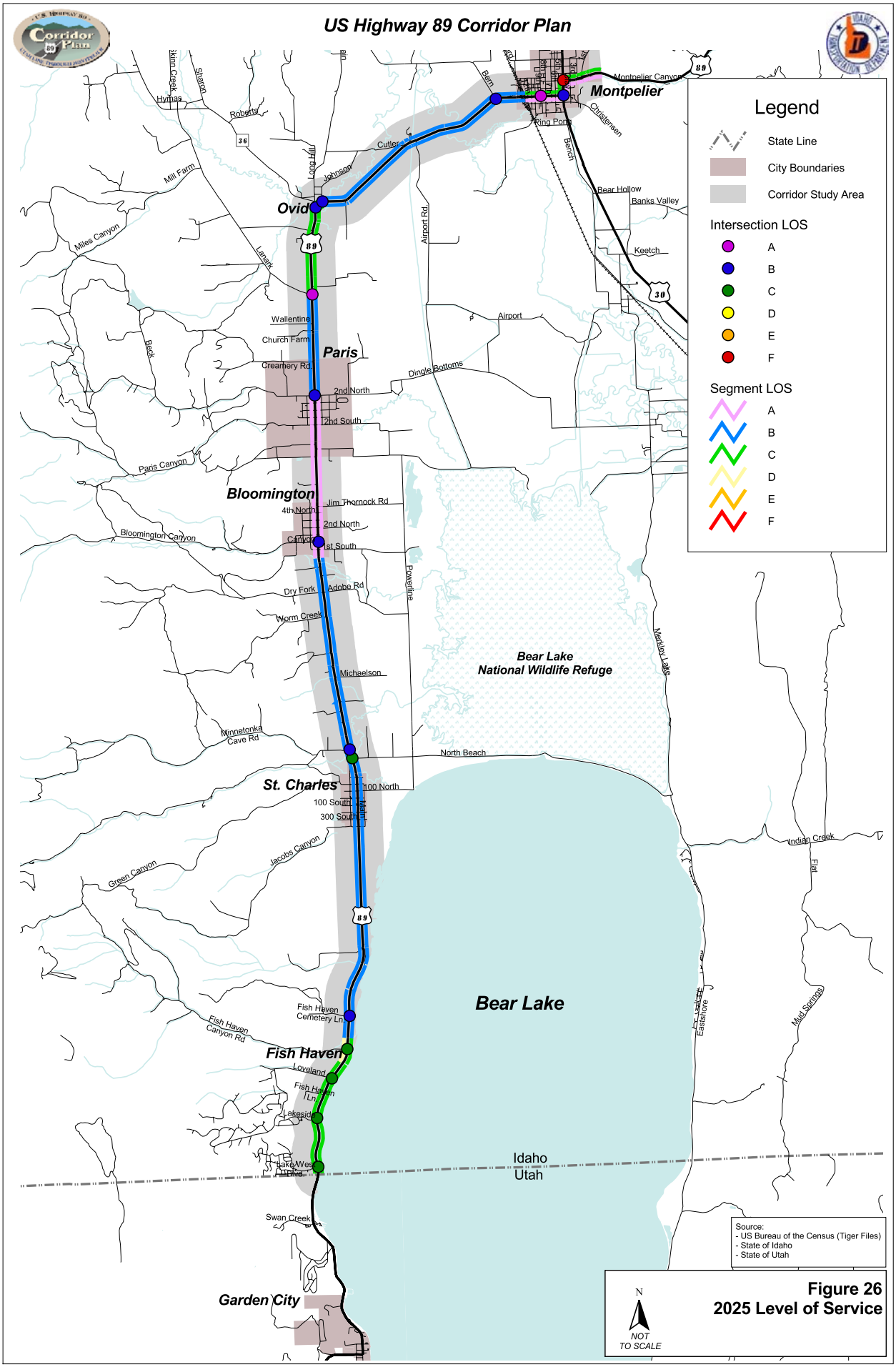

US Highway 89 Corridor Plan
Legend
State Line
City Boundaries
Corridor Study Area
Intersection LOS
A
B
C
D
E
F
Segment LOS
A
B
C
D
E
F
Montpelier
Montpelier Canyon
Ring Point
Christensen
Bench
Bear Hollow
Banks Valley
Keetch
Airport
Airport Rd
Cutler
Johnson
Mill Farm
Ovid
Miles Canyon
Lanark
Wallentine
Church Farm
Paris
Creamery Rd
Dingle Bottoms
2nd North
2nd South
Back
Paris Canyon
Bloomington
4th North
Jim Thornock Rd
2nd North
Canyon
1st South
Bloomington Canyon
Dry Fork
Adobe Rd
Worm Creek
Powerline
Bear Lake
National Wildlife Refuge
Michaelson
Ninnetonka
Cave Rd
North Beach
St. Charles
100 North
100 South
300 South
Jacobs Canyon
Green Canyon
Bear Lake
Fish Haven
Cemetery Ln
Fish Haven
Canyon Rd
Fish Haven
Loveland
Fish Haven
Ln
Lakeside
Idaho
Utah
Swan Creek
Garden City
Indian Creek
Flat
Mud Springs
Source:
- US Bureau of the Census (Tiger Files)
- State of Idaho
- State of Utah
N
NOT
TO SCALE
Figure 26
2025 Level of Service

Table 13
2025 Level of Service Summary
US 89 Segments

Segment		2025 DHV	2025 LOS*	Existing LOS	LOS Std.	Def. ?
From	To					
Idaho-Utah state line	Fish Haven Creek	468/514	C/C	A/A	C	N/N
Fish Haven Creek	Fish Haven n. boundary	435/476	C/D	B/B	C	N/Y
Fish Haven n. boundary	St. Charles s. city limit	406/404	B/B	A	C	N
St. Charles s. city limit	North Beach Rd.	362/364	B/B	A/A	C	N/N
North Beach Rd.	Bloomington Cr. bridge	394	B	B	C	N
Bloomington Cr. bridge	Bloomington n. city limit	270/197	A/A	A/A	C	N/N
Bloomington n. city limit	Paris s. city limit	435	A	A	C	N
Paris s. city limit	E. 2nd South St. (Paris)	159/275	A/A	A/A	C	N/N
E. 2nd South St. (Paris)	E. 2nd North St. (Paris)	200/241	A/A	A/A	C	N/N
E. 2nd North St. (Paris)	Lanark Rd.	438	B	B	B	N
Lanark Rd.	Ovid corner	477	C	C	B	Y
Ovid corner	R.R. overpass (Mont.)	441	B	B	B	N
R.R. overpass (Mont.)	Montpelier e. city limit	Varies by section	A/C	C/B	C	N/N

* Double letters indicate LOS by direction (northbound/southbound, eastbound/westbound); single letters indicate LOS for both directions.

"C" and in eastbound/northbound direction improves from "C" to "A". The reason for the differing changes by direction is the future travel delays that will occur at the intersections of Washington St./4th St. and 4th St./Clay St. Currently at Washington St./4th St., drivers on the stop-controlled eastbound approach on Washington St. incur significant delay, while the drivers on the southbound approach of 4th St., with no stop

control, incur no delay. With the future traffic signal, however, the delay for the eastbound drivers will actually be reduced from current levels, while the southbound drivers, who will have to stop, will be delayed. At the 4th St./Clay St. intersection, the delay for drivers on the stop-controlled westbound approach of Clay St. will become significantly worse due the increase in traffic volumes on 4th St., while the drivers on the northbound approach of 4th St., with no stop control, will be unaffected.

Future year LOS deficiencies are shown in Figure 27 and Table 13. Even though the future LOS along some of the segments will be degraded, the only additional segment falling into the deficient category will be the southbound segment between the northern boundary of Fish Haven and Fish Haven Creek. An interesting result of the LOS analysis at this location is that the LOS for the northbound segment falls one category from "B" to "C" between 2002 and 2025, while the LOS for the southbound segment falls two categories from "B" to "D". This primarily due a higher traffic growth rate for the southbound segment (+198%) compared to the northbound segment (+139%). Additionally, the percent of free flow speed, which is used to measure LOS, falls just below the LOS "C" threshold for the southbound segment, but just above this threshold for the northbound segment.

The only other deficient segment shown in Figure 27 is between Lanark Rd. and Ovid corner, which is also currently deficient. This indicates that while traffic volumes will increase, there will be, in general, enough reserve capacity within the existing system to adequately accommodate future travel demand.

Future Intersection LOS

All of the study area intersections will operate at or above the level of service standard for 2025, with the exception of 4th St./Clay St. in Montpelier (see Table 14 and Figures 26 and 27). At this location, LOS "F" will occur on the minor road approach (Clay St.) due to the significant increase in traffic volume on 4th St. Of the remaining intersections, 5 will operate at LOS "C" on the minor approach and 10 will operate at LOS "A" or "B". This compares to one deficient intersection and one intersection operating at LOS "C" for 2002. The additional intersections operating at LOS "C" for 2025 are all within the Bear Lake area, similar to the changes in segment levels of service discussed above. The LOS at Washington St./4th St. will actually improve from LOS "E" to LOS "B" due to the installation of the traffic signal.

Reported Future Roadway Capacity Deficiencies

The only reported deficiency related to future capacity was that there will be the general need for passing lanes (see Appendix A). The need for this particular improvement type

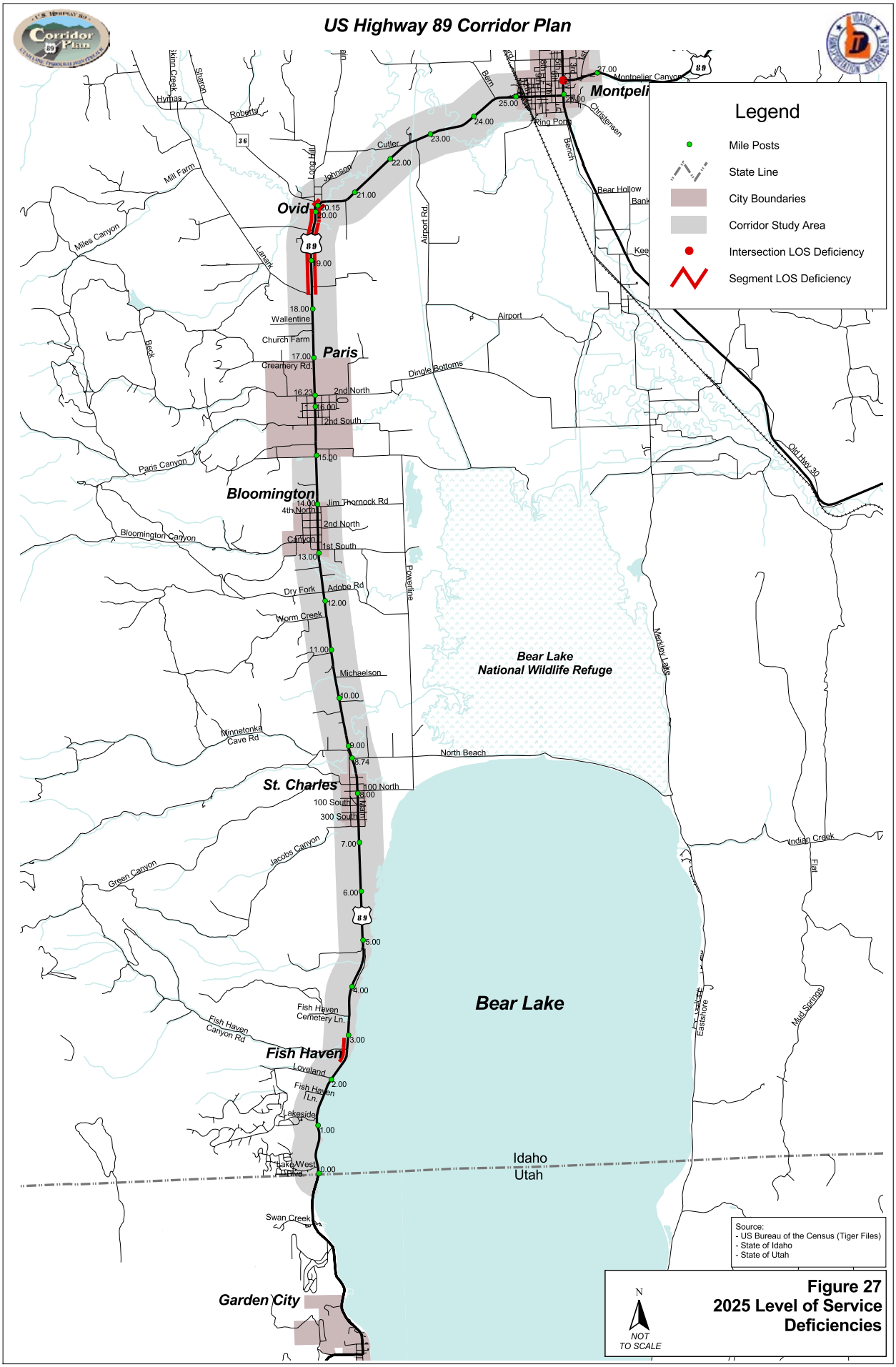

US Highway 89 Corridor Plan
Legend
Mile Posts
State Line
City Boundaries
Corridor Study Area
Intersection LOS Deficiency
Segment LOS Deficiency
Montpelier
Ovid
Paris
Bloomington
St. Charles
Fish Haven
Garden City
Bear Lake
Bear Lake National Wildlife Refuge
Idaho
Utah
Source:
- US Bureau of the Census (Tiger Files)
- State of Idaho
- State of Utah
N
NOT TO SCALE
Figure 27
2025 Level of Service Deficiencies

Table 14
2025 Level of Service Summary
US 89 Intersections

Intersection		2025 LOS*	Existing LOS	LOS Std.	Deficient?
Location	Control				
US 89/ Lake West Blvd.	Two-way stop	A/C	A/B	C	N/N
US 89/ Lakeside Dr.	Two-way stop	A/C	A/A	C	N/N
US 89/ Loveland Ln.	Two-way stop	A/C	A/B	C	N/N
US 89/ Fish Haven Canyon Rd.	Two-way stop	A/C	A/A	C	N/N
US 89/ Fish Haven Cemetery Rd.	Two-way stop	A/B	A/B	C	N/N
US 89/ North Beach Rd.	Two-way stop	A/C	A/B	C	N/N
US 89/ Minnetonka Cave Rd.	Two-way stop	A/B	A/A	C	N/N
US 89/ Bloomington Canyon Rd.	Two-way stop	A/B	A/B	C	N/N
US 89/ 2nd North St.(Paris)	Two-way stop	A/B	A/B	C	N/N
US 89/ Lanark Rd.	Two-way stop	A/A	A/A	B	N/N
US 89/ Ovid corner (s.)	Two-way stop	A/B	A/B	B	N/N
US 89/ Ovid corner (n.)	Two-way stop	A/B	A/B	B	N/N
US 89/ Bern Rd.	Two-way stop	A/B	A/A	B	N/N
Washington St./8th St.	Traffic signal	A	A	C	N
Washington St./4th St.	Traffic signal	B	A/E	C	N
4th St./Clay St.	Two-way stop	A/F	A/C	C	N/Y

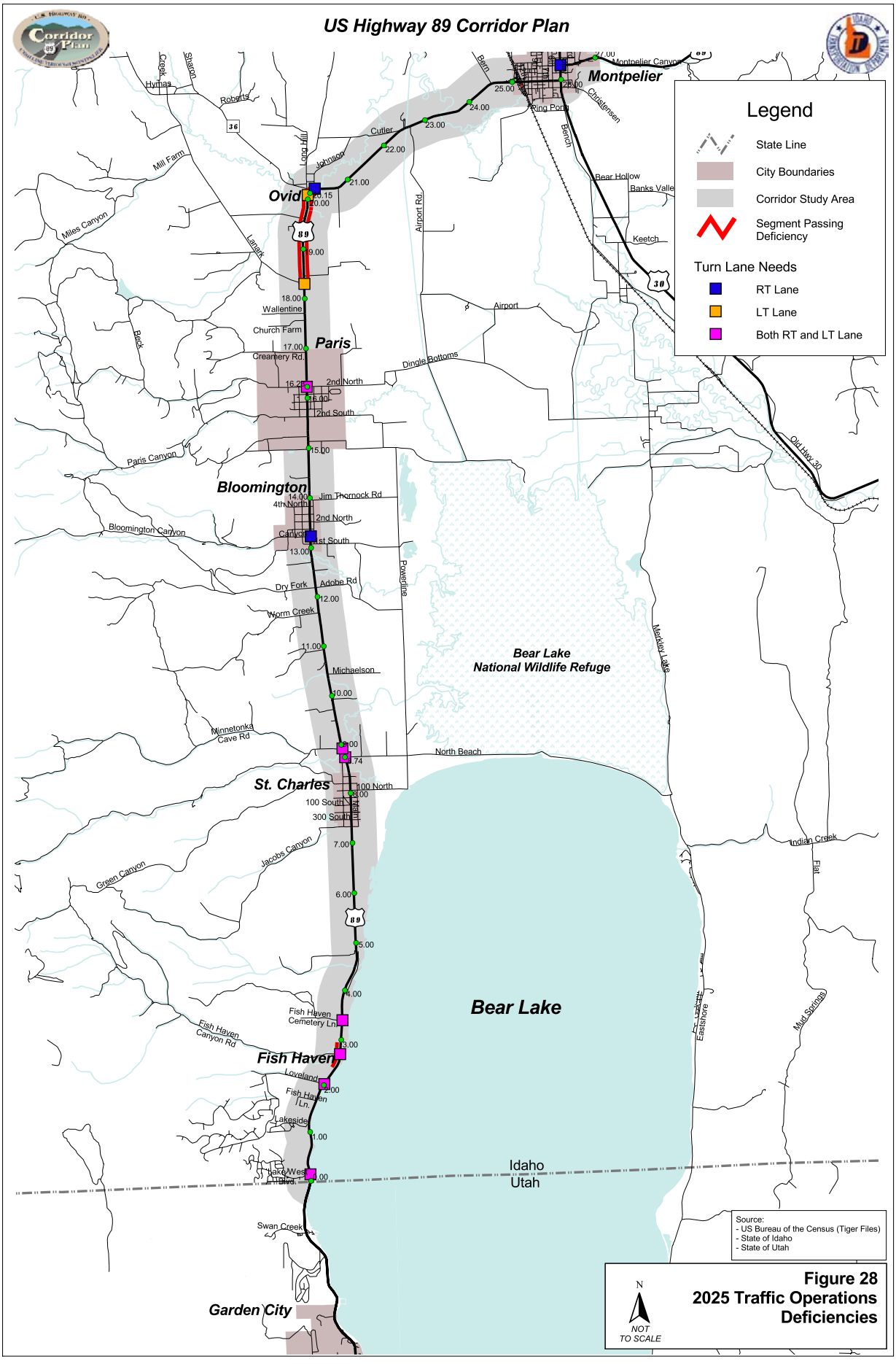
* Double letters indicate level of service by movement (major/minor) for unsignalized intersections. Single letter indicates overall level of service for a signalized intersection.

may be examined in the improvement phase of the study.

Future Traffic Operations

Future Traffic Operations on Roadway Segments

Use of the "percent time-spent-following" level of service criterion as a measure of passing opportunities shows that future traffic operations will be deficient between Lanark Rd. and Ovid corner (see Figure 28). This is also an existing deficiency.


US Highway 89 Corridor Plan
Legend
State Line
City Boundaries
Corridor Study Area
Segment Passing Deficiency
Turn Lane Needs
RT Lane
LT Lane
Both RT and LT Lane
Montpelier
Ovid
Paris
Bloomington
St. Charles
Fish Haven
Garden City
Bear Lake
Bear Lake National Wildlife Refuge
Idaho
Utah
Source:
- US Bureau of the Census (Tiger Files)
- State of Idaho
- State of Utah
N
NOT TO SCALE
Figure 28
2025 Traffic Operations Deficiencies

Future Intersection Traffic Operations

Future intersection turn lane deficiencies were identified in the same manner as existing deficiencies based on the 2025 DHVs and ITD's turn lane warrants (see Appendix C for definition of this term). In addition to the existing needs presented earlier, a northbound left-turn deficiency will exist at the intersection of US 89/Loveland Ln. (see Figure 28). Additional right-turn deficiencies will occur at Fish Haven Canyon Rd., Fish Haven Cemetery Rd., and 2nd North St. in Paris (northbound and southbound).

Table 15
2025 Left-Turn Lane Deficiency Summary
US 89 Intersections

Intersection	Northbound/Eastbound			Southbound/Westbound		
	LT Vol.	Volume Threshold	Def. ?	LT Vol.	Volume Threshold	Def. ?
US 89/Lake West Blvd.	36	12	Y	N/A	N/A	N/A
US 89/Lakeside Dr.	6	12	N	N/A	N/A	N/A
US 89/Loveland Ln.	28	12	Y	N/A	N/A	N/A
US 89/Fish Haven Canyon Rd.	40	12	Y	N/A	N/A	N/A
US 89/Fish Haven Cem. Rd.	18	12	N	N/A	N/A	N/A
US 89/North Beach Rd.	0	12	N	50	12	Y
US 89/Minnetonka Cave Rd.	87	12	Y	N/A	N/A	N/A
US 89/Bloom. Canyon Rd.	12	12	N	1	12	N
US 89/2nd North St. (Paris)	15	12	Y	5	12	N
US 89/Lanark Rd.	15	12	Y	N/A	N/A	N/A
US 89/Ovid corner (s.)	57	12	Y	N/A	N/A	N/A
US 89/Bern Rd.	0	12	N	N/A	N/A	N/A

Table 16
2025 Right-Turn Lane Deficiency Summary
US 89 Intersections

Intersection	Northbound/Eastbound			Southbound/Westbound		
	RT Vol.	Volume Threshold	Def. ?	RT Vol.	Volume Threshold	Def. ?
US 89/Lake West Blvd.	N/A	N/A	N/A	36	5	Y
US 89/Lakeside Dr.	N/A	N/A	N/A	4	5	N
US 89/Loveland Ln.	N/A	N/A	N/A	21	5	Y

Table 16 (cont.)
2025 Right-Turn Lane Deficiency Summary
US 89 Intersections

Intersection	Northbound/Eastbound			Southbound/Westbound		
	RT Vol.	Volume Threshold	Def. ?	RT Vol.	Volume Threshold	Def. ?
US 89/Fish Haven Canyon Rd.	N/A	N/A	N/A	17	5	Y
US 89/Fish Haven Cem. Rd.	N/A	N/A	N/A	9	5	Y
US 89/North Beach Rd.	133	5	Y	1	5	N
US 89/Minnetonka Cave Rd.	N/A	N/A	N/A	20	5	Y
US 89/Bloom. Canyon Rd.	0	5	N	14	5	Y
US 89/2nd North St. (Paris)	10	8	Y	8	8	Y
US 89/Lanark Rd.	N/A	N/A	N/A	2	6	N
US 89/Ovid corner (n.)	N/A	N/A	N/A	94	5	Y
US 89/Bern Rd.	N/A	N/A	N/A	N/A*	N/A	N/A
Washington St./4th St.	1	8	N	N/A	N/A	N/A
4th St./Clay St.	93	5	Y	28	5	Y

* Westbound right-turn lane already exists.

Reported Future Traffic Operations Deficiencies

As shown in Figure 10 and Appendix A, nearly all of the reported future traffic operations deficiencies were related to increased congestion in the Bear Lake area. Specific deficiencies in this area include the need for:

- Scenic overlooks and pull-outs;
- Major realignment or bypass of US 89 around Fish Haven to allow room for a four-lane widening;
- Additional lake access parking; and
- Frontage roads.

Future deficiencies reported for the entire corridor were increased conflicts between local and through traffic and need to limit direct driveway access to the highway.

These deficiencies will be examined in the improvement phase of the study.

Future Traffic Safety

Future safety deficiencies were not analyzed because there is no reliable method for forecasting safety conditions. The only reported future safety deficiency was the potential need for reducing the existing 65 mph speed limit between Fish Haven and St. Charles due to increased traffic accessing the highway along this segment.

Future Roadway Geometrics

Future Geometrics on Roadway Segments

Based on the existing lane widths of 12' or greater along US 89 and ITD's geometric standards shown in Table 8, there would be no lane width deficiencies by 2025. Because ITD's shoulder width standards vary by traffic volume level, there would be a small increase in shoulder width deficiencies with the higher future traffic volumes. This would occur along the segment between Creamery Rd. and Lanark Rd. to the north of Paris, a distance of roughly 1.5 miles.

Future Bridge Geometrics

There would be no other bridge width deficiencies by 2025 in addition to the existing deficiencies at the Ovid Creek (south) and Ovid Creek (east) bridges.

Future Intersection Geometrics

Since intersection and stopping sight distance deficiencies are based on speed and approach grade only and do not include traffic volume, the same deficiencies identified for existing conditions would apply for future conditions.

Approach lane width requirements for minor roads intersecting US 89 will range from 9 - 11 feet. Based on these requirements, a future lane width deficiency was identified for Lake West Blvd., in addition to the existing deficiencies at Bloomington Canyon Rd., Fish Haven Cemetery Rd., Loveland Lane, and Lakeside Dr. As for existing conditions, the only future approach grade deficiency will occur at Lake West Blvd.

Reported Future Geometric Deficiencies

There were no reported future geometric deficiencies.

Future Bicycle and Pedestrian Conditions

The bicycle facility deficiencies described in the existing conditions section included the need for some type of bicycle facility along the entire length of US 89 and an off-system trail extending through the Fish Haven area and north to North Beach Rd. or beyond. These needs may be expected to increase in the future with the growth in recreational development in the Bear Lake area and the general increase in popularity of US 89 as a recreational bicycling route.

Additional pedestrian facility needs will be related to the specific location of future attractors, such as retail development or recreational facilities, and the proximity of surrounding residential development. Where attractors and residential development of sufficient size are located within ¼ mile of one another, additional pedestrian facilities will be required. One such area is the proposed Bear Haven development near Fish Haven Cemetery Lane. Here, because of the location of the retail and recreational attractors relative to housing, pedestrian demand will be served by a system of internal trails within the development rather than pedestrian facilities directly adjacent to US 89. The need for future pedestrian facilities in other areas must be determined on a case-by-case basis as the details of specific development proposals become known.

Future Conditions for Other Modes

No future needs were identified for any of the other corridor transportation modes in the *Idaho Transportation Plan*[31], ITD's modal plans, or the Bear Lake County Comprehensive Plan.

[31] Idaho Transportation Department, Idaho Transportation Plan, (1995).

III. Land Use and Environmental Conditions

Land Use Conditions

Existing Land Use Conditions

This section characterizes the land use and development along the corridor. It is based on field reconnaissance.

BEAR LAKE/FISH HAVEN

The US 89 corridor segment from the Idaho-Utah state line north to Fish Haven is dominated by single-family residential uses, most of which are vacation homes. Most of the houses are on the west side of US 89 and are a part of the Bear Lake West development with access via local roads, such as Bear Lake West Blvd. (MP 0.13), Lakeside Dr. (MP 1.15), and Loveland Ln. (MP 2.02). Bear Lake West includes visitor facilities such as a golf course and restaurant. In between the local roads are a few houses on large parcels with direct access onto the highway.

The lake (east) side of the highway has single-family residential houses with direct access onto US 89. Occasionally, there is a frontage road that consolidates access for multiple parcels. This side also includes private beach/boat access facilities for the vacation home developments. The high water mark of the lake abuts the highway along some portions of this segment.

Fish Haven Canyon Road (MP 2.72) is the community center with some commercial services available such as a post office/store/deli. The lake side of the highway is intensively developed with houses and visitor accommodations and facilities.

The Bear Lake County Comprehensive Plan 2025 identifies commercial and business lands at Bear Lake West Blvd. (MP 0.13), Fish Haven Canyon Road (MP 2.72), and north of Fish Haven Canyon Road. The remaining area along US 89 is designated as recreational and housing development.

FISH HAVEN TO ST. CHARLES

The corridor segment from Fish Haven Cemetery Ln. (MP 3.40) to St. Charles (MP 7.32) is less intensively developed than the southern segment. The east side of the highway has fewer houses with more agricultural use. The lake side also has fewer houses. The lake edge curves to the northeast creating a wider, predominately wetland, buffer between the highway and the lake. This area is mostly pasture land with an occasional house. The

Bear Lake County Comprehensive Plan 2025 designates this area as recreational and housing development.

ST. CHARLES

St. Charles (MP 8.00) is a small incorporated city. The 2000 Census population was 156 people. The city includes mostly single-family houses dispersed on larger lots. Besides the city hall and post office, very few services are available in town. The Bear Lake North RV Park and Campground (36 spaces) is located on the north end of town. A number of commercial services are located north of St. Charles at the North Beach Rd. intersection (MP 8.74).

The St. Charles Comprehensive Plan is in the process of being updated. The Bear Lake County Comprehensive Plan 2025 identifies commercial and business lands on the northeast and southeast corners of the North Beach Rd. intersection (MP 8.74).

BEAR LAKE STATE PARK

Bear Lake State Park is located on the north end of Bear Lake and is accessed via North Beach Rd. (MP 8.74). North Beach is a day-use only area with two miles of beach access, two boat ramps, picnic tables and rest rooms. Approximately 100,000 visitors use the park facilities annually and it is not unusual to find 4,000 to 5,000 visitors on a Saturday during the summer. East Beach has about 2.5 miles of beach access with a large day-use area and a 48-unit campground with water, electricity, and a dump station.

MINNETONKA CAVE

The Minnetonka Cave is located 10 miles west of US 89 on Minnetonka Cave Road (MP 8.84). It is the largest limestone cave in the state with improved, lighted trails. The cave is managed by the U.S. Forest Service and guided tours are offered from June 15 through Labor Day.

ST. CHARLES TO BLOOMINGTON

The corridor segment from MP 9.00 to MP 13.00 is dominated by farmland with an occasional homestead. The agricultural uses are livestock grazing and hay production. These activities occur along both sides of the highway. The Bear Lake County Comprehensive Plan 2025 designates this area as agricultural lands (MP 9.00 to MP 12.00) and community expansion (MP 12.00 to 13.00).

BEAR LAKE NATIONAL WILDLIFE REFUGE

The Bear Lake National Wildlife Refuge is located to the east of the corridor. It is an 18,000-acre refuge managed by the United States Fish and Wildlife Service (USFWS). It encompasses what is locally referred to as Dingle Swamp or Dingle Marsh at the north end of Bear Lake. The refuge is comprised mainly of bulrush-cattail marsh, open water, and flooded meadows of sedges, rushes, and grasses that are managed for habitat for waterfowl and other migratory birds.

BLOOMINGTON

Bloomington (MP 13.00 – 14.00) is a small, incorporated city. The 2000 Census population was 251 people. The city includes mostly single-family houses dispersed on larger lots. Besides the city hall and post office, very few services are available in town. The City of Bloomington is in the process of updating its comprehensive plan.

The Bear Lake County Comprehensive Plan 2025 designates the corridor between Bloomington (MP 14.00) and Paris (MP 15.00) as community expansion.

PARIS

Paris (MP 15.00 – 17.00) is an incorporated city and the county seat. The 2000 Census population was 576 people. The Paris Tabernacle is a prominent landmark on the east side of US 89 (Main Street). The commercial main street includes shops, restaurants, a gas station in addition to the city hall, post office and county court house. The Paris Elementary School is located two blocks east of the highway. Single-family houses are located on either side of US 89.

The City of Paris recently adopted a new comprehensive plan but did not adopt a zoning map.

PARIS TO OVID

The US 89 corridor segment from Paris (MP 17.00) to Ovid (MP 20.00) has more residential development than the other rural segments of the highway corridor. These homesteads are farms and ranches with direct access onto the highway. The Helmets U.S.A. factory is located at MP 17.00 on the west side of the highway.

The Bear Lake County Comprehensive Plan 2025 designates the area north of Paris (MP 17.00) to Lanark Road (MP 18.25) as community expansion. The area from Lanark Road to Ovid is designated as agricultural lands.

OVID

Ovid is a small, unincorporated community located at the junction of Hwy 36 and US 89. The Jensen Lumber Company is located on the east side of the highway, on the inside portion of the Ovid curve. The community includes a mix of single-family homes on smaller lots and farm/ranches on larger parcels. The Bear Lake County Comprehensive Plan 2025 designates this area as rural community.

OVID TO MONTPELIER

The US 89 corridor segment from MP 20.00 (Ovid) to MP 23.00 is predominantly wetlands that are used for grazing and pasture land. The segment from MP 23.00 to the outskirts of Montpelier (MP25.00) includes a mix of pasture land, farm homesteads, and dispersed light industrial uses, including the KVSI 1450 AM radio station (MP 24.00).

The Bear Lake County Comprehensive Plan 2025 designates the area from Ovid to just west of Bern Road (MP 24.25) as agricultural use. The segment from Bern Road to the Montpelier city limits (MP 25.00) is designated as community expansion.

MONTPELIER

Montpelier is the largest city and commercial center of Bear Lake County. The 2000 Census population was 2,785 people. The area to the west of the railroad overpass includes a mix of dispersed light industrial uses. To the east of the overpass is the historic commercial main street, which includes shops, services, restaurants, a gas station, and movie theater. This commercial segment transitions to civic uses such as the Bear Lake Middle School, the Montpelier Tabernacle, and city hall.

At 4th Street, US 89 merges with US 30 for a short segment, before splitting again at Clay Street and heading east into Montpelier Canyon and to Wyoming. The Oregon Trail Museum is located at the US30/US89 intersection at Clay Street. The remainder of the segment is through a residential neighborhood to the edge of the city limits.

In 2001, the City of Montpelier adopted a new comprehensive plan. It designates the area east of the railroad as industrial. The historic main street (Washington Street), from the overpass to 4th Street, is designated as central business. The 4th Street corridor, which is the joint US 89/US 30 segment from Washington Street to Clay Street, is designated as service business.

EXTERNAL IMPACTS ON THE US 89 CORRIDOR

US 89 links Salt Lake City and Logan, Utah to Jackson, Wyoming. Salt Lake City airport is the closest major international airport to Yellowstone National Park. Consequently, US 89 serves as a major corridor for tour buses, especially during the summer season.

Bear Lake is also a major recreation area for the Salt Lake City region. Currently, the peak period is during the summer when visitors enjoy the lake, water recreation and other outdoor activities. The area is also experiencing increasing popularity during the winter, with snowmobiling as the primary attraction.

OWNERSHIP AND USE

Bear Lake County encompasses roughly 628,000 acres and is approximately 51 percent in public ownership. The Cache and Caribou National Forests comprise approximately 230,000 acres and are located along the higher-elevation mountain ranges on either side of the Bear Lake Valley. The Bear Lake National Wildlife Refuge is 18,000 acres and is located north of Bear Lake.

Table 17
Bear Lake County Land Ownership

Private Ownership	Acres	Public Ownership	Acres
Irrigated Agriculture	35,661	*Federal*	
Irrigated Pasture	3,149		
Non-Irrigated Agriculture	45,369	National Forests	229,978
Meadow	45,998	Bureau of Land Management	55,893
Dry Grazing	149,736	US Fish and Wildlife Service	18,060
Agriculture Subtotal	279,913	Federal Subtotal	303,931
Mineral Land	3,390	*State*	
Rural Subdivision/Homesite	824		
Rural Residential	1,531	Endowment Lands	15,368
Rural Commercial	203	Fish and Game	2,261
Rural Industrial	68	Parks and Recreation	966
Other Rural Land	12,930		

Table 17 (cont.)
Bear Lake County Land Ownership

Private Ownership	Acres	Public Ownership	Acres
Land within Cities	6,400	State Subtotal	18,595
		County and City	123
Total Private Land	**305,259**	**Total Public Land**	**322,649**
Total Land			**627,908**

Source: Bear Lake Comprehensive Plan 2025, 2001 County Assessor Records

Future Land Use Conditions

For the purpose of forecasting future travel demand and transportation needs, a forecast of future housing units and employment was prepared. The future year was defined as 2025 in order to be consistent with *the Bear Lake County Comprehensive Plan*. Appendix E includes a memo that describes in more detail the methodology and underlying assumptions that support the future year housing units and employment forecast and distribution.

HOUSING UNITS

The future housing unit forecast is based on recent building permit trends, as reported by the Bear Lake Regional Commission. The building permit data for 1999, 2000, and 2001 were distributed by geographic subarea in Bear Lake County.

The average number of new housing units per year was projected to 2025. This approach does not factor in any increase in the rate of growth due to increasing popularity/ attractiveness of Bear Lake as a vacation destination. Nor does it factor in any economic slowdown during that period. These two forces are expected to balance out over the forecast period.

The new housing units were divided into seasonal (vacation homes) and non-seasonal (permanent residents). Based on the *Bear Lake County Comprehensive Plan* (see Figure 29*)*, it was assumed that 85% of the west side and east side Bear Lake units would be seasonal units. A seasonal unit factor was assumed for the cities of St. Charles (40%) and Paris (15%) based on the proportions found in the 2000 Census.

Table 18
2025 Forecast of New Housing Units in Bear Lake County

Area	Total	Non-Seasonal	Seasonal
West side of Bear Lake	1058	159	899
East side of Bear Lake	192	29	163
St. Charles	25	15	10
Paris	25	21	4
Lanark-Liberty	33	33	0
Montpelier	25	25	0
Other (outside corridor)	267	267	0
Total	**1,624**	**548**	**1,076**

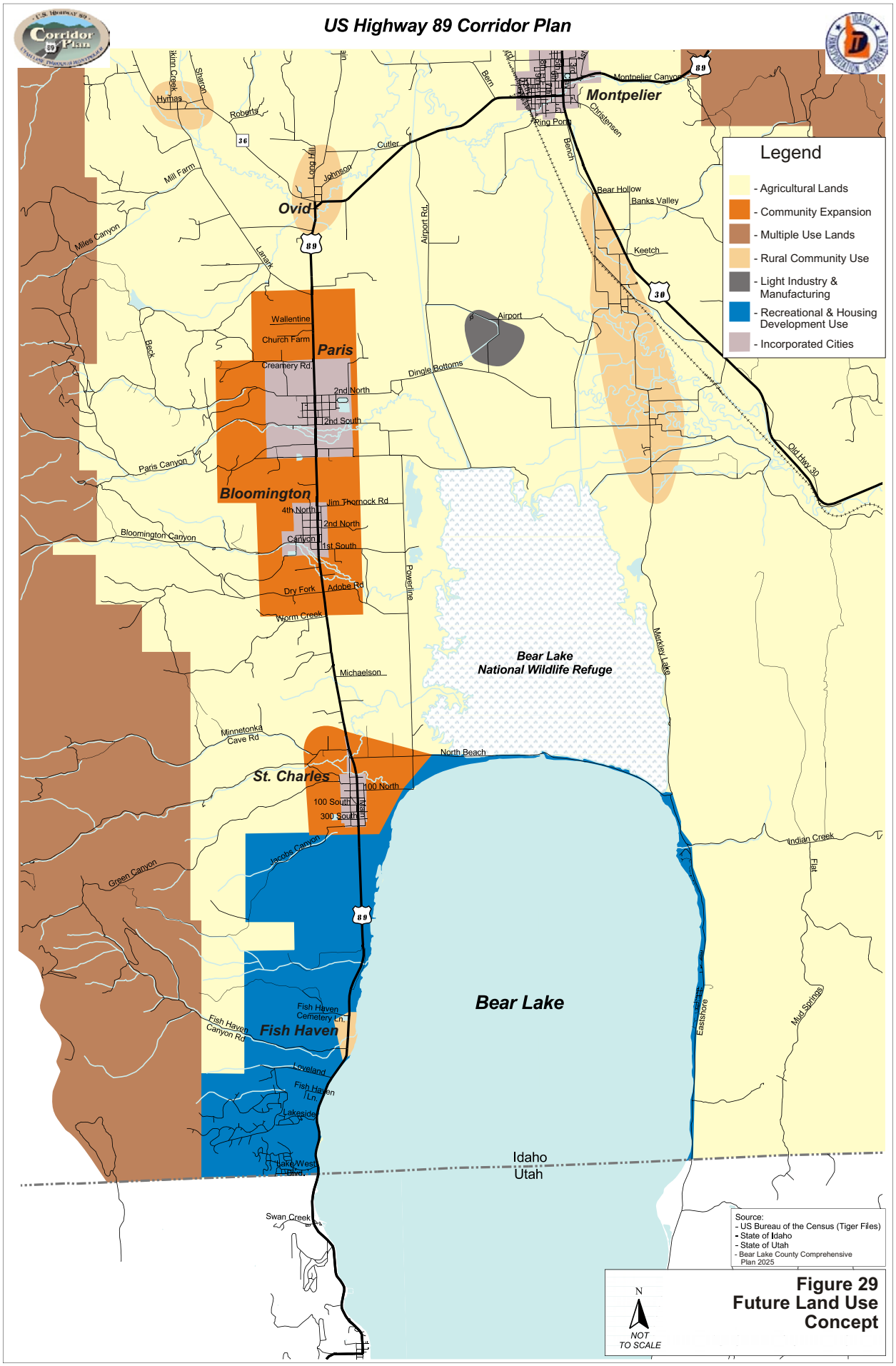


Figure 29
Future Land Use Concept

This forecast resulted in 1,407 new permanent residents in 2025, assuming a vacancy rate of 8.6% and 2.81 persons per household based on the 2000 Census.

For validation purposes, this forecast was compared to other forecasts and an extrapolation of the 1990-2000 growth rate (based on the 2000 Census). This forecast falls within the range of other forecasts. The *Bear Lake County Comprehensive Plan* expects slower growth based on declining school enrollment. In assuming a higher growth rate, this forecasts provides a margin of error to help ensure that adequate transportation facilities are available, but it is not the highest rate of growth nor does it represent a buildout scenario.

Table 19
Comparison of Bear Lake County Population Forecasts

Forecast	1990	2000	2025	Avg. Annual Growth Rate
Idaho Power		6,530	8,591	1.3%
US 89 Corridor Plan		6,411	7,818	0.9%
90-00 Growth Rate	6,084	6,411	7,212	0.5%
Woods & Poole		6,570	6,910	0.2%

Source: Bear Lake County Comprehensive Plan and 2000 Census

The new housing units were distributed along the US 89 corridor. Along the west side of Bear Lake, the new housing units were distributed based on existing platted subdivisions and the proposed Bear Haven subdivision. Bear Haven is a proposed development north of Fish Haven, between MP 3.00 and MP 5.00. The proposed project includes a total of 567 recreational houses, with 459 houses and retail commercial space on the west side of US 89. The east side of the highway includes 108 houses, a restaurant, retail commercial space with a gas station, and beach access/boat ramp facilities.

A key assumption is the proposed Bear Haven subdivision will not be growth-inducing, but will compete with the other developments and absorb units as Bear Lake West begins to buildout, and that Bear Lake West will achieve 90% buildout and Bear Haven will achieve 75% buildout by the year 2025.

The result is that most of the new growth occurs along the west side of Bear Lake, with only marginal growth in the other communities along the corridor.

EMPLOYMENT

The future employment forecast was based on the *1999 Employment Profile of Bear Lake County* prepared by the US Bureau of Economic Analysis. This profile distributed the jobs into broad categories, as presented in Table 20.

Table 20
1999 Bear Lake County Employment Profile

Sector	Jobs
Farm	600
Manufacturing	126
Construction	137
Transp./Utilities	100
Retail	564
FIRE	164
Services	Not Disclosed
Government	601
Total	**2,947**

Source: US Bureau of Economic Analysis

The employment sectors were consolidated into retail and non-retail categories. The employment totals were divided by the number of housing units to determine the number of jobs per housing unit for each category. The retail sector forecast was based on the total number of housing units under the assumption that the seasonal units primarily provide support (customers) for the retail businesses. The non-retail sector forecast was based only on non-seasonal housing units under the assumption that the seasonal units only provide marginal support for these businesses. These assumptions resulted in a faster rate of growth for the retail sector, due to the faster rate of growth for seasonal units in the housing forecast.

Table 21
1999 Employment per Housing Unit

Sector	Jobs/Unit
Non-Retail	0.95
Retail	0.18

The future employment forecast used the jobs per unit rates for each sector and the housing unit forecast. For retail employment, the number of jobs was broken out into separate non-seasonal and seasonal sectors.

Table 22
2025 Employment Forecast

Sector	New Jobs	Total Jobs
Retail		
Non-Seasonal	104	547
Seasonal	200	321
Non-Retail	547	2,930
Total	**851**	**3,798**

The future employment growth rates were compared to the 1990-1999 growth rates. The future employment forecast reflects modest growth rates compared to the 1990s, as shown in Table 23 below.

Table 23
Employment Growth Rates

1990-99	1990	1999	Avg. Annual Growth Rate
Total	**2,230**	**2,947**	**3.2%**
Retail	447	564	2.6%
Non-Retail	1,783	2,383	3.4%
2000-25	**1999**	**2025**	**Avg. Annual Growth Rate**
Total	**2,947**	**3,798**	**1.2%**
Retail	564	868	2.2%
Non-Retail	2,383	2,930	0.9%

Source: US Bureau of Economic Analysis

In general, the retail employment distribution was largely based on existing retail locations and future locations identified in the *Bear Lake County Comprehensive Plan 2025*. Also, it was assumed that most of the retail jobs associated with the seasonal

housing units will be located in the Bear Lake area. The non-seasonal retail jobs and non-retail jobs will be distributed throughout Bear Lake County.

Table 24
Retail Employment Distribution Assumptions

Location	Assumption
Bear Lake West	Additional retail/services associated with buildout of development.
Fish Haven	Expansion of existing commercial businesses.
Bear Haven	New commercial development.
East Shore	New commercial development tied to housing development.
St. Charles	Expansion of existing commercial businesses (North Beach Rd.)
Bloomington	Expansion of existing commercial businesses.
Paris	Expansion of existing commercial businesses.
Montpelier	Expansion of County's major commercial center.

Environmental Conditions

Socio-Economic Profile

This section presents a profile of Bear Lake County and the communities along the US 89 corridor, including the cities of St. Charles, Bloomington, Paris and Montpelier. The demographic data is based on the 2000 Census, and includes information on population, race and gender, households and housing units, and income and employment characteristics.

Overall, Bear Lake County's profile is fairly consistent in comparison to the communities along the US 89 corridor, which is to be expected given that nearly 60% of the county's population is concentrated in these communities. This profile will highlight differences between Bear Lake County and the State of Idaho, as well as differences between the communities along the corridor.

POPULATION

The population of Bear Lake County grew to 6,411 in 2000, gaining 327 residents during the 1990s, which is a significantly slower growth rate than the State of Idaho. Bloomington was the only city to keep pace with statewide growth, while Paris and St. Charles lost population.

	Idaho	Bear Lake County	Montpelier	Paris	Bloomington	St. Charles
1970	712,567	5,801	2,604	615	186	200
1980	943,935	6,931	3,107	707	212	211
1990	1,006,749	6,084	2,656	581	197	189
2000	1,293,953	6,411	2,785	576	251	156
90-00 Change	287,204	327	129	-5	54	-33
% Change	28.5%	5.4%	4.9%	-0.9%	27.4%	-17.5%

RACE AND ETHNICITY

Most of the residents of Bear Lake County are white, accounting for 97.7 percent of all residents, a higher proportion than the 91 percent of all Idaho residents. Persons of Hispanic origin account for about 2.4 percent of the county's population, which is less than the 7.9 percent of the state's total population.

	Idaho		Bear Lake County		Montpelier		Paris		Bloomington		St. Charles	
Total population	1,293,953		6,411		2,785		576		251		156	
White	1,177,304	91%	6,261	97.7%	2,693	96.7%	571	99.1%	244	97.2%	153	98.1%
Black or African American	5,456	0.4%	6	0.1%	0	0%	2	0.3%	0	0%	0	0%
American Indian and Alaska Native	17,645	1.4%	34	0.5%	17	0.6%	1	0.2%	7	2.8%	2	1.3%
Asian	11,889	0.9%	5	0.1%	0	0%	0	0%	0	0%	0	0%
Native Hawaiian and Other Pacific Islander	1,308	0.1%	3	0%	1	0%	0	0%	0	0%	0	0%
Some other race	54,742	4.2%	69	1.1%	55	2%	2	0.3%	0	0%	1	0.6%
Two or more races	25,609	2%	33	0.5%	19	0.7%	0	0%	0	0%	0	0%
Hispanic or Latino	101,690	7.9%	154	2.4%	106	3.8%	4	0.7%	6	2.4%	3	1.9%

LANGUAGE SPOKEN AT HOME

Bear Lake County has a higher proportion of people that speak English only compared to statewide (96.3 percent to 90.7 percent).

	Idaho		Bear Lake County		Montpelier		Paris		Bloomington		St. Charles	
Population 5 years and over	1,196,793		5,985		2,601		520		259		124	
English only	1,084,914	90.7%	5,763	96.3%	2,434	93.6%	510	98.1%	256	98.8%	123	99.2%
Language other than English	111,879	9.3%	222	3.7%	167	6.4%	10	1.9%	3	1.2%	1	0.8%
Speak English less than very well	46,539	3.9%	61	1%	39	1.5%	1	0.2%	1	0.4%	1	0.8%
Spanish	80,241	6.7%	172	2.9%	143	5.5%	7	1.3%	1	0.4%	0	0%
Speak English less than very well	36,459	3%	54	0.9%	39	1.5%	1	0.2%	1	0.4%	0	0%
Other Indo-European languages	19,460	1.6%	41	0.7%	24	0.9%	0	0%	2	0.8%	1	0.8%

AGE

Bear Lake County and the communities along the US 89 corridor have larger proportions of young people (under 18 years) and seniors (65 year and over) than the statewide

percentages. Also, the median age along the corridor is higher, especially in Paris (38.2 years) and St. Charles (44.7 years).

	Idaho		Bear Lake County		Montpelier		Paris		Bloomington		St. Charles	
Total population	1,293,953		6,411		2,785		576		251		156	
Under 18 years	369,030	28.5%	2,114	33.0%	899	32.3%	177	30.7%	97	38.6%	46	29.5%
18 to 64 years	779,007	60.2%	3,300	51.5%	1,425	51.2%	306	53.1%	117	46.6%	66	42.3%
65 years and over	145,916	11.3%	997	15.6%	461	16.5%	93	16.1%	37	14.7%	44	28.2%
Median age (years)	33.2		35.8		34.3		38.2		34.3		44.7	

MARITAL STATUS

Bear Lake County and the communities along the US 89 corridor generally have higher percentages of people now married compared to the statewide percentages.

	Idaho		Bear Lake County		Montpelier		Paris		Bloomington		St. Charles	
Population 15 years and over	991,624		4,797		2,113		418		175		112	
Never married	226,558	22.8%	937	19.5 %	424	20.1%	69	16.5%	35	20%	12	10.7%
Now married, except separated	594,983	60%	3,146	65.6 %	1,258	59.5%	283	67.7%	126	72%	83	74.1%
Separated	11,624	1.2%	29	0.6%	17	0.8%	1	0.2%	0	0%	0	0%
Widowed	52,913	5.3%	354	7.4%	191	9%	32	7.7%	9	5.1%	12	10.7%
Divorced	105,546	10.6%	331	6.9%	223	10.6%	33	7.9%	5	2.9%	5	4.5%

EDUCATION

Bear Lake County and the communities along the US 89 corridor have comparable rates of people with a high school graduation but lower percentages of people with a bachelor's degree or higher compared to the statewide rates.

	Idaho		Bear Lake County		Montpelier		Paris		Bloomington		St. Charles	
Pop. 25 years and over	787,505		3,837		1,699		334		149		100	
Less than 9th	41,039	5.2%	142	3.7%	67	3.9%	3	0.9%	6	4%	1	1%

	Idaho		Bear Lake County		Montpelier		Paris		Bloomington		St. Charles	
grade												
9th to 12th grade, no diploma	79,322	10.1%	416	10.8%	212	12.5%	34	10.2%	22	14.8%	25	25%
High school graduate	224,322	28.5%	1,616	42.1%	777	45.7%	173	51.8%	42	28.2%	34	34%
Some college, no degree	215,204	27.3%	1,005	26.2%	382	22.5%	78	23.4%	50	33.6%	20	20%
Associate degree	57,003	7.2%	209	5.4%	65	3.8%	12	3.6%	11	7.4%	5	5%
Bachelor's degree	116,901	14.8%	335	8.7%	133	7.8%	18	5.4%	15	10.1%	12	12%
Graduate or professional degree	53,714	6.8%	114	3.0%	63	3.7%	16	4.8%	3	2.0%	3	3%
Percent high school graduate or higher	84.7%		85.5%		83.6%		88.9%		81.2%		74.0%	
Percent bachelor's degree or higher	21.7%		11.7%		11.5%		10.2%		12.1%		15.0%	

PLACE OF RESIDENCE IN 1995

Bear Lake County and the communities along the US 89 corridor have higher rates of people who are living in the same house or the same county since 1995 compared to statewide rates. These rates range from 76 percent to 89 percent of the people who have lived in Bear Lake County since 1995.

	Idaho		Bear Lake County		Montpelier		Paris		Bloomington		St. Charles	
Population 5 years and over	1,196,793		5,985		2,601		520		259		124	
Same house in 1995	593,848	49.6%	3,838	64.1%	1,542	59.3%	387	74.4%	174	67.2%	89	71.8%
Different house in the U.S. in 1995	581,979	48.6%	2,139	35.7%	1,059	40.7%	133	25.6%	85	32.8%	35	28.2%
Same county	286,443	23.9%	1,051	17.6%	547	21%	78	15%	53	20.5%	6	4.8%
Different county	295,536	24.7%	1,088	18.2%	512	19.7%	55	10.6%	32	12.4%	29	23.4%
Same state	112,607	9.4%	251	4.2%	132	5.1%	15	2.9%	20	7.7%	0	0%
Different state	182,929	15.3%	837	14%	380	14.6%	40	7.7%	12	4.6%	29	23.4%
Elsewhere in 1995	20,966	1.8%	8	0.1%	0	0%	0	0%	0	0%	0	0%

EMPLOYMENT

Montpelier is the employment center of Bear Lake County, with 42 percent of the employed persons in the county compared to 43% of the population in the county. In 2000, the unemployment rates were consistent between the countywide rate (7.7 percent) and the corridor communities (7.7 percent to 8.1 percent), except for St. Charles, which reported full employment.

Employment	Bear Lake County	Montpelier	Paris	Bloomington	St. Charles
Population 16 years and over	4,628	2,062	404	169	107
In labor force	2,675	1,135	244	100	32
Employed	2,482	1,047	224	92	32
Unemployed	193	88	20	8	0

Bloomington has a significantly higher percentage (39 percent) of people employed in management and professional type jobs but a lower percentage of service and sales type jobs, albeit Bloomington makes up a small percentage (3 percent) of the county's overall employment.

Type of Employment	Bear Lake County		Montpelier		Paris		Bloomington		St. Charles	
Total	2,482									
Management and professional	644	25.9%	253	24.2%	49	21.9%	36	39.1%	8	25.0%
Service	427	17.2%	226	21.6%	47	21.0%	10	10.9%	7	21.9%
Sales	545	22.0%	210	20.1%	43	19.2%	12	13.0%	5	15.6%
Farming, fish, and forest	77	3.1%	12	1.1%	7	3.1%	5	5.4%	0	0%
Construction and maintenance	346	13.9%	131	12.5%	23	10.3%	13	14.1%	9	28.1%
Production, transportation, and distribution	443	17.8%	215	20.5%	55	24.6%	16	17.4%	3	9.4%

Nearly 65 percent of the employment in Bear Lake County is concentrated in four sectors. Education, health and social services make up 19.4% of the employment, which is expected considering the school district and hospital are two of the largest employers in the county. Manufacturing (16.6 percent), retail (15.9 percent), and agriculture (12.9 percent) are the other three major employment sectors.

Employment Sector	Bear Lake County		Montpelier		Paris		Bloomington		St. Charles	
Agriculture, forestry, fishing and hunting, and mining	319	12.9%	58	5.5%	27	12.1%	17	18.5%	1	3.1%
Construction	168	6.8%	79	7.5%	10	4.5%	6	6.5%	6	18.8%
Manufacturing	412	16.6%	162	15.5%	45	20.1%	3	3.3%	5	15.6%
Wholesale trade	34	1.4%	19	1.8%	10	4.5%	0	0%	0	0%
Retail trade	395	15.9%	186	17.8%	26	11.6%	8	8.7%	8	25%
Transportation and warehousing, and utilities	113	4.6%	43	4.1%	15	6.7%	11	12%	0	0%
Information	44	1.8%	26	2.5%	3	1.3%	2	2.2%	0	0%
Finance, insurance, and real estate	122	4.9%	57	5.4%	8	3.6%	0	0%	0	0%
Professional, management, and administrative services	62	2.5%	23	2.2%	12	5.4%	0	0%	0	0%
Educational, health and social services	482	19.4%	212	20.2%	30	13.4%	32	34.8%	7	21.9%
Arts, entertainment, recreation, accommodation and food services	188	7.6%	105	10%	19	8.5%	6	6.5%	5	15.6%
Other services	52	2.1%	33	3.2%	4	1.8%	3	3.3%	0	0%
Public administration	91	3.7%	44	4.2%	15	6.7%	4	4.3%	0	0%

HOUSEHOLD INCOME

Bear Lake County's median household income is less than the statewide median, primarily because of slightly higher proportions of middle income households ($10,000 - $49,999) and lower proportions in the upper income brackets ($75,000+). Paris and Bloomington have the highest proportion of households with more than $50,000 in income, with 32.8 percent and 35.8 percent respectively. These two communities have median household income levels that are higher than the countywide median and, in the case of Paris, higher than the statewide median. St. Charles has a significantly lower median household income that is 32 percent lower than the countywide median and 41 percent lower than the statewide median.

	Idaho	Bear Lake County		Montpelier		Paris		Bloomington		St. Charles	
Households	470,133	2,269		1,025		213		81		60	
Less than $10,000	8.7%	218	9.6%	110	10.7%	20	9.4%	5	6.2%	5	8.3%
$10,000 to $24,999	22.4%	586	25.8%	291	28.4%	50	23.5%	20	24.7%	30	50.0%
$25,000 to $49,999	34.1%	819	36.1%	373	36.4%	71	33.3%	27	33.4%	19	31.6%

	Idaho	Bear Lake County		Montpelier		Paris		Bloomington		St. Charles	
$50,000 to $74,999	19.2%	451	19.9%	202	19.7%	46	21.6%	23	28.4%	3	5.0%
$75,000 to $99,999	8.3%	149	6.6%	46	4.5%	22	10.3%	3	3.7%	3	5.0%
$100,000 or more	7.2%	46	2.1%	3	0.3%	4	0.9%	3	3.7%	0	0.0%
Median household income	$37,572	$32,162		$29,693		$40,341		$34,750		$21,923	

POVERTY STATUS

Bear Lake County's poverty rates are slightly lower for families and individuals and slightly higher for seniors compared to statewide rates. For Montpelier, all three categories have higher rates than the statewide rates. Paris and Bloomington generally have lower poverty, which is expected given those communities' higher median household incomes. St. Charles has higher poverty rates for families and seniors. Poverty rates for seniors (aged 65+ years) are higher than statewide rates (except Bloomington), which is not unexpected given Bear Lake County's higher median age and higher proportion of seniors.

	Idaho	Bear Lake County		Montpelier		Paris		Bloomington		St. Charles	
Families below poverty level	8.3%	123	7.1%	66	9.2%	6	3.8%	3	4.2%	5	10.9%
Individuals below poverty level	11.3%	610	9.6%	357	12.9%	35	6.2%	8	2.8%	10	7.3%
Seniors aged 65+ years below poverty level	8.3%	90	9.2%	39	9.2%	10	11.9%	0	0.0%	6	11.5%

HOUSING

Occupancy Status

Bear Lake County has a higher proportion of vacant housing units compared to the statewide proportions, which is reflective of the vacation homes around Bear Lake.

	Idaho		Bear Lake County		Montpelier		Paris		Bloomington		St. Charles	
Total housing units	527,824		3,268		1,171		292		111		106	
Occupied units	469,645	89%	2,259	69.1%	1,012	86.4%	218	74.7%	81	73%	57	53.8%
Vacant units	58,179	11%	1,009	30.9%	159	13.6%	74	25.3%	30	27%	49	46.2%

Tenure

Bear Lake County and the communities along the US 89 corridor have higher rates of housing ownership compared to statewide rates of ownership.

	Idaho		Bear Lake County		Montpelier		Paris		Bloomington		St. Charles	
Occupied units	469,645		2,259		1,012		218		81		57	
Owner-occupied units	339,960	72.4%	1,878	83.1%	767	75.8%	192	88.1%	71	87.7%	53	93%
Renter-occupied units	129,685	27.6%	381	16.9%	245	24.2%	26	11.9%	10	12.3%	4	7%

Vacancy Status

Bear Lake County and the communities along the US 89 corridor have lower vacancy rates for "for rent" and "for sale" units compared to statewide rates. Except for Montpelier, Bear Lake County and the other communities along the US 89 corridor have significantly higher proportions of housing units for seasonal or recreational use.

	Idaho		Bear Lake County		Montpelier		Paris		Bloomington		St. Charles	
Vacant units	58,179		1,009		159		74		30		49	
For rent	10,656	18.3%	56	5.6%	41	25.8%	8	10.8%	0	0%	0	0%
For sale only	7,682	13.2%	55	5.5%	26	16.4%	5	6.8%	1	3.3%	1	2%
Rented or sold, not occupied	2,725	4.7%	67	6.6%	19	11.9%	4	5.4%	1	3.3%	1	2%
For seasonal, recreational, or occasional use	27,478	47.2%	729	72.2%	23	14.5%	39	52.7%	28	93.3%	42	85.7%
For migratory workers	721	1.2%	0	0%	0	0%	0	0%	0	0%	0	0%
Other vacant	8,917	15.3%	102	10.1%	50	31.4%	18	24.3%	0	0%	5	10.2%

Type of Housing Unit

Bear Lake County and the communities along the US 89 corridor have a higher proportion of single-family, detached houses compared to the state as a whole. Bear Lake County and Montpelier have significantly lower proportion of mobile homes compared to statewide proportions and the other communities along the US 89 corridor.

	Idaho		Bear Lake County		Montpelier		Paris		Bloomington		St. Charles	
Total	527,824		3,268		1,157		297		109		107	
1, detached	369,924	70.1%	2,830	86.6%	964	83.3%	240	80.8%	93	85.3%	88	82.2%
1, attached	15,211	2.9%	36	1.1%	4	0.3%	0	0%	0	0%	2	1.9%
2 (duplex)	14,709	2.8%	27	0.8%	14	1.2%	2	0.7%	0	0%	0	0%
3 or 4	21,441	4.1%	49	1.5%	30	2.6%	11	3.7%	0	0%	0	0%
5 to 9	14,047	7.7%	43	1.3%	33	2.9%	10	3.4%	0	0%	0	0%
10 to 19	9,716	1.8%	0	0%	0	0%	0	0%	0	0%	0	0%
20 or more	15,880	3.0%	64	2.0%	64	5.5%	0	0%	0	0%	0	0%
Mobile home	64,163	12.2%	197	6.0%	48	4.1%	32	10.8%	16	14.7%	14	13.1%
Boat, RV, van, etc.	2,733	0.5%	22	0.7%	0	0%	2	0.7%	0	0%	3	2.8%

Age of Structure

Bear Lake County and the communities along the US 89 corridor have significantly older housing stock. The proportion of houses built before 1939 makes up at least one-third of the housing units in the county, compared to 11% statewide, with St. Charles the highest at 57.9%. The number of housing units built since 1990 is significantly lower, with Montpelier having only 4.5% of its housing stock built in the last ten years, trailing the county and other communities.

	Idaho		Bear Lake County		Montpelier		Paris		Bloomington		St. Charles	
Total Units	527,824		3068		1,157		297		109		107	
Built 1990 to 2000	134,268	25.4%	570	15.6%	53	4.5%	34	11.4%	14	12.8%	14	13.1%
Built 1980 to 1989	65,869	12.5%	374	11.4%	97	8.4%	15	5.1%	23	21.1%	10	9.3%
Built 1970 to 1979	129,261	24.5%	432	13.2%	175	15.1%	63	21.2%	20	18.3%	8	7.5%
Built 1960 to 1969	52,263	9.9%	300	9.2%	116	10.0%	6	2.0%	7	6.4%	8	7.5%
Built 1940 to 1959	85,400	16.2%	562	17.2%	341	29.5%	43	14.5%	9	8.3%	5	4.7%
Built 1939 or earlier	60,763	11.5%	1,090	33.4%	375	32.4%	136	45.8%	36	33.0%	62	57.9%

Environmental Scan

The purpose of the environmental scan is to characterize existing environmental conditions and determine whether there are significant environmental resources that could influence transportation improvement options considered as part of the corridor plan. Resources were inventoried within one-half mile on either side of the corridor.

Methods to characterize the environmental conditions included reviews of published reports, interviews with public agency staff, and available Geographic Information System (GIS) coverages. A field reconnaissance of the corridor confirmed the published information as well as recording the site-specific conditions.

The environmental conditions along the 27-mile corridor are presented from south (Idaho-Utah state line) to north (City of Montpelier).

This environmental scan is not a compliance document related to any specifically planned project or action. Formal Section 7 consultation as well as other processes conducted in accordance with the Council of Environmental Quality (CEQ) regulations to comply with the National Environmental Policy Act of 1969 (NEPA) are not part of the corridor planning process.

CLIMATE

The Bear Lake Valley is topographically high (near 6,000 feet) and has long cold winters and short summers. Average mid-winter high temperatures are in the low 30s. Mid-summer highs average in the low 80s. Average annual precipitation is 9.5 inches at Bear Lake, and 13.5 inches near Montpelier.

TOPOGRAPHY

The US 89 highway corridor runs through the Bear Lake Valley, which is relatively flat and is about 6,000 feet in elevation. Mountain ranges on either side of the valley rise up to 9,500 feet, with the Bear River Range on the west and the Bear Lake Plateau and Preuss Range on the east side.

GEOLOGY

Bear Lake Valley does not have typical basin and range structure. It is a fault-bounded basin, or graben, with faults on both the east and west sides. The largest fault borders the east side of Bear Lake. The Paris thrust fault is on the west side, just east of Bloomington

and Paris. A normal fault branches off the Paris thrust fault and approaches and runs parallel to the US 89 corridor near Bloomington.[32]

The mountains of the Preuss and Aspen Ranges to the northeast of the Bear Lake Valley belong to the Meade thrust plate of the Idaho-Wyoming thrust belt. This is the area that contains the rich phosphate deposits of the Permian Phosphoria Formation, deposited in a nutrient-rich warm sea about 250 million years ago. Mining of the Phosphoria Formation has been and will be a major influence on the economy of not only the Bear Lake area, but much of southeast Idaho.

The Bear River Range to the west of the Bear Lake Valley contains Lower Paleozoic and Late Proterozoic rocks of the Paris thrust plate. The Paris thrust extends along the east side of the Bear River Range and places these older rocks over younger Paleozoic rocks of the Meade thrust plate.

The US 89 highway corridor in the Bear Lake Valley is situated on Quaternary surficial (Qs) cover with fluveolian cover on Snake River Plain and alluvial fans (Snake River Group).

SOILS

The predominate soil type of the US 89 corridor is a mixed alluvium on alluvial fans, pediments and loess-covered limestone hills associated with the alluvial deposits of Recent age and Jurassic and Triassic sedimentary rocks of their respective ages. The sedimentary rocks have a thin to thick cover of loess. These soil mapping units were evaluated and rated as part of the *Bear Lake County Comprehensive Plan 2025*. The evaluation determined that this soil unit was Tolerant in terms of erosion hazard, shrink and swell potential, permeability, depth to bedrock, depth to water table, and development limitations.

The segment of US 89 adjacent to Bear Lake abuts a different soil type on the west side as the topography rises up from the edge of the lake. This soil type is mixed alluvium on alluvial fans, stream terraces, pediments and glacial till associated with the Wasatch formation consisting largely of a conglomerate of Eocene age, alluvial deposits of Recent age, Salt Lake formation and associated strata of Pliocene and Pleistocene ages. The *Bear Lake County Comprehensive Plan 2025* evaluation determined that this soil unit was Sensitive.

The US 89 corridor between St. Charles and Ovid crosses in and out of another soil type. This soil type is loess-covered lake terraces associated with the Salt Lake formation and

[32] Link, Paul Karl & E. Chilton Phoenix. 1996. Rocks, Rails & Trails (Virtual Edition). Idaho Museum of Natural History, URL: http://imnh.isu.edu/digitalatlas/geog/rrt/rrtzoom.htm (visited February 25,2003)

associated strata of Pliocene and Pleistocene age. A relatively thick loess mantle covers this land form. The *Bear Lake County Comprehensive Plan 2025* evaluation determined that this soil unit was Tolerant.

WATER RESOURCES

Water is an important resource for the US 89 corridor. Most of the agriculture and ranching depends on irrigation. Average precipitation in the corridor ranges from 9.5 to 13.5 inches annually. Water flow and lake levels are influenced mainly by snowmelt from the surrounding mountain ranges.

Water resources within the US 89 corridor include Bear Lake, the Bear River, and several tributaries to Bear Lake and the Bear River.

Bear Lake

Bear Lake is located at the southern end of the highway corridor and extends south into Utah. It is approximately 20 miles long and 8 miles wide and comprising 70,000 acres, of which 32,000 acres are located in Bear Lake County. Bear Lake is 208 feet deep at its greatest depth and has a maximum volume of 6.5 million acre feet.

Bear Lake was isolated from the Bear River until the early 20th century when a diversion dam, an inlet and outlet canal with a pumping station were constructed, allowing the Bear River to flow into and out of the lake. Bear Lake has been regulated ever since for downstream electrical power production and contracted irrigation.

Introduction of the Bear River into the lake also introduced large loadings of oxygen robbing pollutants to the lake's oligotrophic water quality (low in nutrients and minerals, rich in oxygen and usually very clear). These contaminants have been identified as contributing to the lake's observed "cultural eutrophication," (a natural aging process of a water body accelerated by human activities), raising water quality concerns among the basin's watershed managers.

Bear Lake drains into the Bear River via the Rainbow Canal and the Bear Lake Outlet, which is part of a man-made canal system operated by Utah Power and Light for hydro power and irrigation water storage. The Bear Lake Outlet crosses the US 89 corridor at MP 22.68, just east of Ovid.

Bear Lake is managed for multiple uses, including irrigation, power generation, recreation, and fish and wildlife habitat. These uses bring about fluctuations in water levels. At high water levels, the edge of the lake can abut the highway between MP 0.00 and MP 2.50.

Bear River

The Bear River begins its 500-mile course in northeastern Utah's Uinta Mountains. Its headwaters, fueled by several hundred inches of yearly snowfall, flows northward into southwestern Wyoming, back into Utah, again into Wyoming, into southeastern Idaho, where it is diverted by man-made canals into and back out of Bear Lake, then eventually makes a huge U-turn southward and back, once again, into Utah and its journey's end, the Great Salt Lake. The Bear River and its tributaries represent approximately 60 percent of the 2 million total acre feet of surface inflow water entering the Great Salt Lake.

The Bear River crosses the US 89 corridor at MP 23.34, just east of the Bear Lake Outlet crossing at MP 22.68, between Ovid and Montpelier. The confluence of the Bear River and the Bear Lake Outlet is about one mile north of the corridor.

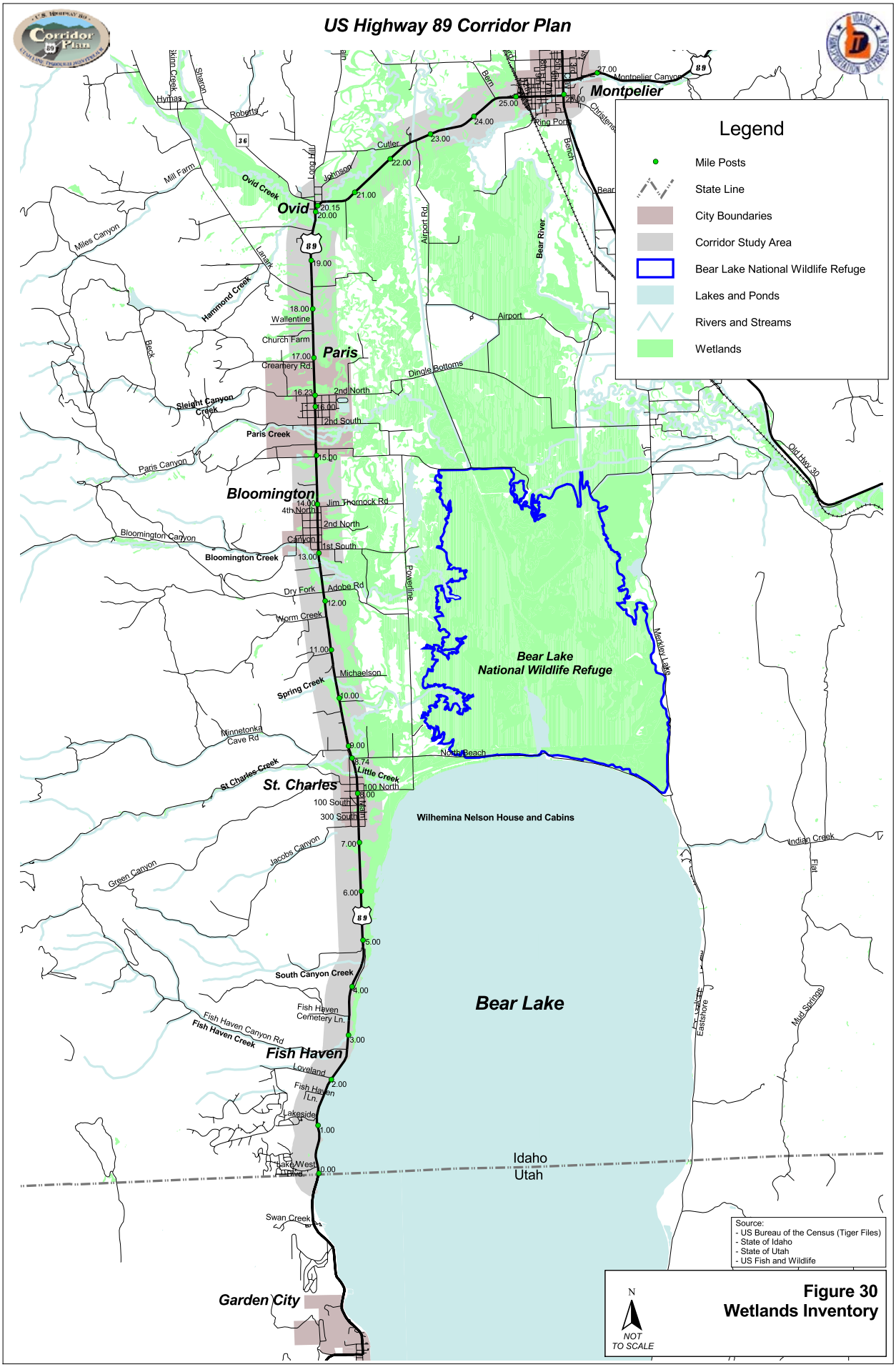
Streams

Several tributaries to Bear Lake and the Bear River cross US 89 within the corridor study area (see Figure 30), including: Fish Haven Creek (MP 2.95), South Canyon Creek (MP 4.51), the Little Creek (MP 8.39) and Big Creek (MP 8.77) branches of St. Charles Creek (multiple crossings), Spring Creek (MP 10.34), Bloomington Creek (multiple crossings, MP 12.53-12.80), Paris Creek (multiple crossings, MP 15.34-15.54), Sleight Canyon (MP 16.37), Ovid Creek (multiple crossings, MP 19.79 – 20.38). Montpelier Creek flows parallel to the highway, south of the corridor and west from Montpelier into the Bear River. Each of the creeks have adjacent riparian areas which are flood prone areas as they cross the highway corridor.

St. Charles Creek is a major spawning stream for cutthroat trout from Bear Lake. The Idaho Department of Fish and Game (IDFG) is protecting and restoring habitat along the creek. Three fish screens have been constructed and approximately two miles of heavily grazed stream banks have been protected with riparian corridor fences. As a mitigation project, Utah Power and Light connected the Big Creek branch of St. Charles Creek, which increased the spawning and rearing habitat for Bear Lake cutthroat trout and reduced the loss of juvenile cutthroat trout to irrigation diversions.[33]

Fish Haven Creek could also be a significant spawning tributary, but most, and frequently all of, the water is diverted for irrigation through much of the summer.[34]

[33] Idaho Department of Fish and Game. 2001. Fisheries Management Plan, 2001-2006.
[34] Ibid.


US Highway 89 Corridor Plan
Legend
Mile Posts
State Line
City Boundaries
Corridor Study Area
Bear Lake National Wildlife Refuge
Lakes and Ponds
Rivers and Streams
Wetlands
Montpelier
Ovid
Paris
Bloomington
St. Charles
Fish Haven
Garden City
Bear Lake
Bear Lake National Wildlife Refuge
Wilhemina Nelson House and Cabins
Idaho
Utah
Source:
- US Bureau of the Census (Tiger Files)
- State of Idaho
- State of Utah
- US Fish and Wildlife
N
NOT TO SCALE
Figure 30
Wetlands Inventory

Wetlands

Wetlands are a major feature of the Bear Lake Valley. The field reconnaissance noted extensive areas of wetlands and marshes. The US Fish and Wildlife Service (USFWS) has conducted the National Wetlands Inventory (NWI) to identify the extent and types of wetlands (see Figure 30). The NWI identifies primarily palustrine wetlands within the US 89 corridor. Palustrine wetlands are non-tidal wetlands dominated by trees, shrubs, persistent emergent vegetation. These wetlands are located primarily along the eastside of the corridor between Fish Haven and Ovid; and on both sides of the corridor from Ovid to Montpelier. The NWI identified approximately 5,950 acres of wetlands and open water out of 17,440 acres within the US 89 corridor study area (1/2 mile from the centerline).

The following wetland functions and values could be impacted by highway improvement projects within the corridor: habitat for fish and wildlife, ground water discharge, flood storage, shoreline anchoring and dissipation of erosive forces, nutrient retention, and sediment trapping.[35] Potential project impacts could be mitigated by minimizing the disturbance area with restoration and enhancement to compensate for the loss of wetland functions and values.

Fieldwork did not verify the location, size and type of wetlands.

WILDLIFE

Idaho Conservation Data Center's (CDC) database was searched for sensitive species including those that are federally listed under the Endangered Species Act (ESA) and other species afforded special protection status by any federal agency or the State of Idaho.[36] The IDFG and the USFWS were consulted regarding wildlife, birds and fish habitat, as well as species of concern.

Big Game

Deer, elk, and moose are present along the US 89 corridor, especially during winter. Winter range is a function of elevation, snow depth, vegetation and animal behavior, especially for deer and elk, which have traditional wintering areas. The winter ranges are typically used from mid-December to mid-April. Bear Lake County has a limited amount of winter range due to its high elevation and topography.

[35] Jankovsky-Jones, Mabel. 1997. Conservation Strategy for Southeastern Idaho Wetlands. Idaho Department of Fish and Game. Boise, Idaho.
[36] Idaho Conservation Data Center (Idaho CDC), Idaho Department of Fish and Game. 2002. Database search report, dated October 28, 2002.

Migration routes of big game, especially deer and elk, have been documented by IDFG. The migration generally starts in November, depending on snow depths, and ends by late-December. In addition to movement to lower elevations, the game moves south along the west side of Bear Lake, parallel to the US 89 corridor.

Bear and cougar are also present in limited numbers.

Birds

As identified by the National Wetlands Inventory (NWI), quality wildlife habitat is found all along the wetland areas associated with Bear Lake. The habitat is primarily for birds and fish.

Bear Lake National Wildlife Refuge

The Bear Lake National Wildlife Refuge is an 18,000-acre refuge managed by the USFWS. The refuge is comprised mainly of bulrush-cattail marsh, open water, and flooded meadows of sedges, rushes, and grasses that are managed habitat for waterfowl and other migratory birds.

The refuge provides habitat for 20 species of waterfowl and 34 water birds and shore birds. Common nesting species include the Canada goose, redhead, canvasback, mallard, gadwall, cinnamon teal and northern shoveler. Other nesting colonies include white-faced ibis, snowy egret, black-crowned night-heron, double-crested cormorant, California gull, Franklin's gull, Caspian tern, Forster's tern, black tern, western grebe and eared grebe. The refuge has one of the largest nesting colonies of White-faced ibis in the continental United States, with up to 5,000 adult ibis present in the spring. Shorebirds such as willets, avocets and stilts are commonly seen in shallow water and mudflat areas.

Trumpeter swans use the refuge as a wintering area. The 2000 mid-winter survey counted 18 swans, including two cygnets.

Sandhill cranes are frequently observed. In the Fall, up to 400 cranes can be observed in the refuge.

Other Bird Species

Sage grouse and sharp-tailed grouse are important upland bird species. The sage grouse can be found in isolated pockets that are remnants of a larger population that has been reduced due to loss of habitat. The sage grouse is not very adaptive to human activities, especially in winter range, nesting and strutting areas, and summer habitat. The habitat areas identified on the map are general locations due to the scattered nature of the

pockets. Sagebrush is the primary food source for sage grouse. The disturbance or removal of sagebrush will result in loss of habitat.

Raptors are found in the area. Bald eagles, Ferrigrin hawks, and other species of hawks are known to nest in the rocks in the mountains above the eastside of Bear Lake.

Fish

Bear Lake, the Bear River and associated tributaries are managed to provide sport fishing opportunities.

Bonneville Cutthroat Trout

The Bonneville cutthroat trout in Idaho is found in only a few small tributaries to the Bear River. The Bear Lake cutthroat trout is recognized as the adfluvial form of the Bonneville cutthroat trout and is designated as a "Watch" species. These fish are adversely affected by water management, dam construction, introductions of other fish species, grazing practices, and irrigation dewatering in tributaries. The Bonneville cutthroat trout was petitioned for federal listing in 1998, but the USFWS denied that petition. So, the Bonneville cutthroat trout is designated as a species of concern. The Idaho Department of Water Resources, Idaho Department of Environmental Quality, and the Caribou National Forest have responsibility for managing most of the affected habitat and streams. The IDFG is pursuing agreements to protect these streams against further habitat loss and to enhance already degraded habitats. The Utah Department of Natural Resources operates a fish hatchery for cutthroat trout that ascend Swan Creek.[37]

Fish Endemic to Bear Lake

The Bear Lake whitefish, Bonneville whitefish, Bonneville cisco, and Bear Lake sculpin are found only in Bear Lake. Because of their restricted range, they are vulnerable to extinction in Bear Lake, and related tributaries are critical to persistence of these species. Annual studies by Utah State University and Utah's Division of Wildlife Resources have determined that populations of these species are large and stable.

Special Status Species[38]

Special status species include federally designated threatened and endangered species and species of special concern.

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[37] Idaho Department of Fish and Game. 2001. Fisheries Management Plan, 2001-2006.

[38] Groves, C. R., Butterfield, B., Lippincott, A., Csuti, B., & Scott, J. M.; Lippincott, A.editor. 1997. Atlas of Idaho's wildlife. The Idaho Department of Fish and Game, The Nature Conservancy, and Idaho Gap Analysis Project, joint publishers.

Gray Wolf

Once found throughout Idaho, the gray wolf is now restricted to forested areas in central and northern Idaho. The federal listing for gray wolves made a distinction in Idaho between wolves that occur north of I-90 and wolves that occur south of I-90. Gray wolves occurring north of I-90 are listed as endangered species. Gray wolves occurring south of I-90 are listed as part of an experimental population, with special regulations defining their protection and management. There are no reported observations in the corridor area.[39]

Canada Lynx

Canada lynx is currently listed as Threatened by the USFWS. The lynx is found in boreal and mixed forests and in rugged outcrops, bogs, and thickets. There is no Canada lynx habitat within 2 miles of the project corridor.[40] However, the Canada lynx was known to occur in the Bear River watershed from historic records, with the closest sighting to the corridor occurring northeast of Georgetown.

Pygmy Rabbit

The Idaho CDC recommends that the pygmy rabbit be considered if big sagebrush habitat is present.

Bald Eagle

Wintering bald eagles have been documented along the Bear River, the east shore of Bear Lake and the Fish Haven area. The 1995 mid-winter survey counted 10 birds. The Bear River provides suitable foraging areas. No nest sites have been reported within the corridor.[41]

Trumpeter Swan

Trumpeter swans are a species of concern and use the Bear Lake Wildlife Refuge as a wintering area. The 2000 mid-winter survey counted 18 swans, including two cygnets.

[39] Idaho CDC, October 28, 2002.
[40] Idaho CDC, October 28, 2002.
[41] Idaho CDC, October 28, 2002.

White-faced Ibis

The Bear Lake Wildlife Refuge has one of the largest nesting colonies of white-faced ibis in the continental United States, with up to 5,000 adult ibis present in the spring.

Columbian Sharp-tailed Grouse

The corridor contains sharp-tailed grouse nesting habitat. IDFG has sighted sharp-tailed grouse throughout the corridor and the Bear Lake County. There is potential for sharp-tailed grouse habitat loss with wetland removal in the corridor area.

Bonneville Cutthroat Trout

Please see discussion above under Fish section.

Fish Endemic to Bear Lake

Please see discussion above under Fish section.

Table 25
Special Status Species

Common Name	Scientific Name	Type	Listing	Nesting or Sighting Areas	Comments
Gray Wolf	Canis lupus	Animal	USFWS Experimental Nonessential		
Canada Lynx	*Felis lynx*	Animal	USFWS Listed Threatened		Historically Known
Pygmy Rabbit	*Brachylagus idahoensis*	Animal	USFWS Watch Species		Historically Known
Bald Eagle	*Haliaeetus leucocephalus*	Bird	USFWS Listed Threatened	Along Bear River	Wintering Area
Trumpeter Swan	*Cygnus buccinator*	Bird	USFWS Species of Concern		Wintering Area
White-faced Ibis	*Plegadis chihi*	Bird	USFWS Species of Concern		Colonial Breeding Area
Columbian Sharp-tailed Grouse	*Tympanuchus phasianellus columbianus*	Bird	USFWS Species of Concern		Probable Nesting Area

Table 25 (cont.)
Special Status Species

Common Name	Scientific Name	Type	Listing	Nesting or Sighting Areas	Comments
Bonneville Cutthroat Trout	*Oncorhynchus clarki utah*	Fish	Petitioned under review	Bear River	

HISTORIC AND CULTURAL RESOURCES

This section provides preliminary information on known or likely historic or cultural resources within the highway corridor. The environmental scan for historical, architectural and archaeological resources consisted of both records research and field reconnaissance to provide preliminary identification of potential resources along the highway corridor.

It is important to note that the concerns of Native Americans regarding potential traditional cultural resources must be considered under Section 106 of the National Historical Preservation Act (NHPA) prior to implementation of a proposed project. Traditional cultural resources are associated with cultural practices and beliefs of communities that are rooted in their history and important in maintaining the continuing cultural identities of the communities.

In Idaho, these are usually associated with modern Native American groups and may include archaeological resources; locations of historic events; sacred areas; sources of raw material used to produce tools and sacred objects; traditional hunting or gathering areas; and native plants or animals. Native Americans may consider these resources essential for the persistence of their traditional culture, and only tribal members can determine the importance of the resources. The Shoshone-Bannock Tribes, the Eastern Shoshone Tribe, and the Northwest Band of the Shoshone Nation are the tribes with an interest in the US 89 corridor.

National Register of Historic Places (National Register)

Figure 31 identifies the location of historic resources.

The Anna Nielsen Scofield House, located at 2788 US 89 in Fish Haven, is a Victorian era house that was built in 1896.[42]

[42] Idaho State Historic Preservation Office. Anna Nielson Scofield House, Idaho Historic Sites Inventory Form. April 1, 1999.

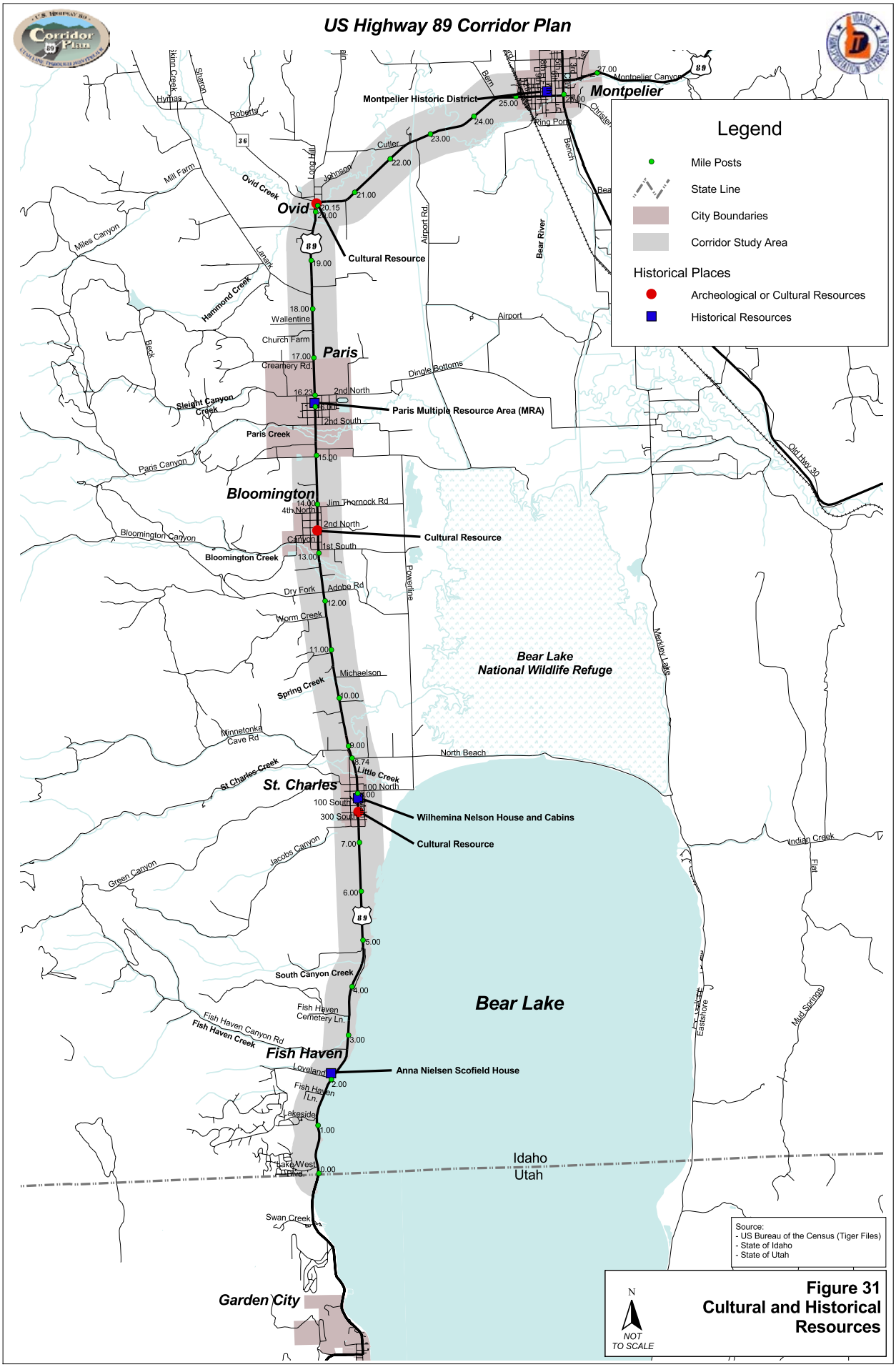

Figure 31
Cultural and Historical Resources

The Wilhemina Nelson House and Cabins is located on Main Street South in St. Charles. The Nelson house is a two-story, clapboard structure placed on a cement foundation built in 1896. The original log cabin was built shortly after 1876. Another log cabin was the birthplace of Gutzon Borglum (sculptor of Mt. Rushmore) and was moved to the homestead from a short distance away.[43]

The Paris Multiple Resource Area (MRA) contains 79 listings. One of the most prominent is the Paris Tabernacle, which is a large sandstone church that seats over 2,000 people, which is three times the population of the town, and has a steeple 175 feet tall. Designed by one of Brigham Young's sons, this imposing Romanesque Tabernacle was built between 1884 and 1889 by skilled local craftsmen.[44]

The Thomas Sleight Cabin is another significant historic resource in Paris. It was built in the Fall of 1863 by Thomas Sleight and Charles Atkins, who with their wives, Marianne and Ann, occupied it together during the first winter of the settlement of Paris, Idaho. It is now owned by the State of Idaho and has been moved to a park on the west side of Main Street (US 89).[45]

The Montpelier Historic District is comprised of four major buildings: the city hall, Montpelier Tabernacle of the Church of Jesus Christ of Latter-Day Saints, middle school, and Odd Fellows Hall. These buildings front on Washington Street and are distinct from the surrounding residential area in their scale, materials and function.[46]

The neo-classical revival style city hall was built in 1917 and is distinguished by its portico with pairs of Tuscan columns. The semi-circular LDS Tabernacle on the adjacent corner is the city's largest auditorium and features round, arched entries with ornate terra cotta. The modern style high school (now the middle school) is across US 89 from the tabernacle and was constructed in 1937 as a Public Works Administration project. It is distinguished by mountain red variegated tapestry brick and extensive ornamental terra cotta trim. The Montpelier Odd Fellows Hall is a two-story, cut-stone building in the Renaissance Revival style, built in 1898-1899. Distinctive features include second floor arched windows with colored glass fanlights and a pediment with eye and chain symbols of the order.

A complete survey of historic resources in Bear Lake County has not been conducted. Therefore, additional places and structures may be nominated for placement on the National Register.

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[43] Idaho State Historic Preservation Office. Wilhelmina Nelson House and Cabins, Idaho Historic Sites Inventory Form. May 3, 1976.
[44] J-U-B Engineers. Oregon Trail-Bear Lake Scenic Byway Corridor Management Plan. 2001.
[45] Ibid.
[46] Ibid.

The Oregon Trail passes through Bear Lake County, roughly parallel to US 30 from Montepelier to Soda Springs.

Archaeological or Cultural Resources

Bear Lake County does not have an extensive inventory of archaeological or cultural resources. Therefore, any areas near water or lithic (stone) resources could have cultural resource sites. The most extensive survey was completed in 1968 for the Bear River Power project. Open sites were documented near St. Charles, Bloomington and Ovid.[47]

Figure 31 identifies the general vicinity of known cultural resource sites. These identifiers are placed on the centerline of the highway to indicate the general location. The actual location of the cultural resource is confidential information, which may not be provided to the public.

POTENTIAL HAZARDOUS SITES

Identification of potential hazardous or environmentally contaminated sites along the US 89 corridor consisted of a review of public records and a field reconnaissance to identify fuel stations, pipelines, and industrial uses that have the potential to use, store, or generate hazardous materials as part of their on-going operations.

Potential hazardous sites consist of leaking underground storage tanks (LUSTs), previous chemical spills, contaminated hazardous waste sites (listed as federal Superfund sites) or gas and petroleum product pipelines and storage facilities.

The Idaho Department of Environmental Quality's (DEQ) list of known leaking USTs was reviewed for this scan.[48]

Table 26
Leaking Underground Storage Tanks

Site Name	Street Location	City	Cleanup Complete?
Bear Lake Middle School	697 Jackson St.	Montpelier	No
Bear Lake Motor Co. Inc.	867 Washington St.	Montpelier	Yes

[47] Bear Lake Regional Commission. 2002. Bear Lake Comprehensive Plan 2025. Bear Lake Regional Commission, Fish Haven, ID.
[48] Idaho Department of Environmental Quality. 2002b. UST/LUST Interactive Mapping Site. URL: http://www2.state.id.us/deq/mapoptix/ustlust.cfm (visited October 15, 2002).

Table 26 (cont.)
Leaking Underground Storage Tanks

Site Name	Street Location	City	Cleanup Complete?
L&M Market	364 Main St.	Montpelier	Yes
Montpelier Station	149 S. 12th St.	Montpelier	Yes
Utah Power and Light	US 89	Montpelier	Yes
Walton Feed Inc.	135 N. 10th St.	Montpelier	No
Bear Lake Airport			No
Carlsen's Phillips 66	US 89	Paris	Yes
Marks & Mikes Inc.	209 S. Main St.	Paris	Yes
Tolands Market	93 N. Main St.	Paris	No

The U.S. Environmental Protection Agency's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database does not identify any Superfund Program sites, hazardous waste sites, or potential hazardous waste sites in Bear Lake County.[49]

Bear Lake County has only one landfill, which is located in Montpelier Canyon.[50] Active and historic mines include the Blackstone, Boulder, and Clark mines.[51]

AIR QUALITY

Bear Lake County is in compliance with all National Ambient Air Quality Standards (NAAQS) for carbon monoxide, particulate matter, nitrogen oxides, sulfur oxides, ozone, and airborne lead.[52]

[49] U.S. Environmental Protection Agency. 2002. Superfund Information System. URL: http://www.epa.gov/superfund/sites/siteinfo.htm (visited October 28, 2002).
[50] Idaho Department of Environmental Quality. 2002a. Statewide Active and Closed Municipal and Non-Municipal Landfill Sites. URL: http://www2.state.id.us/deq/mapoptix/landaps.cfm (visited October 15, 2002).
[51] Idaho Department of Lands (IDL). 2002. Mines Listing. URL: http://gis.idl.state.id.us/GIShtm/static/mines.htm (visited October 15, 2002).
[52] Idaho Department of Environmental Quality (IDEQ). 1998. Air Quality Monitoring Report.

Appendix A

REPORTED ROADWAY DEFICIENCIES

Table A-1
US 89 Reported Roadway Deficiencies

Deficiency No.	From/At	M.P.	To	M.P.	Reported Deficiency						
					Description	Type*	Time Frame		Frequency	Source	Findings/Status
							Existing	Future			
1	Utah State Line	0.00		0.00	Turnaround needed for school buses, snow plows. Must now back up onto highway to turn around (illegal for school buses to do so).	O	x		1	Open house	Existing deficiency
2	Utah State Line	0.00	Fish Haven Creek	2.58	Cars from residences on east side of highway parked on highway. Boats trailers backed out of driveways onto highway.	O	x		1	ITD staff	Field survey found vehicles parked on shoulder. Also, due to low lake level, many vehicles were parked directly on beach/lake bottom.
3	Utah State Line	0.00	Fish Haven Creek	2.58	Lake comes up to fog line at some locations when water line is at higher levels	O	x		1	ITD staff	Existing deficiency
4	Utah State Line	0.00	Fish Haven Creek	2.58	Narrow shoulders, so parked vehicles occupy portion of travel lanes.	O	x		1	City of Montpelier staff	Shoulder width deficiencies identified for this section.
5	Utah State Line	0.00	Fish Haven Creek	2.58	Narrow road	G	x		2	Open house	Lane widths adequate, but shoulder width deficiencies identified for this section.
6	Utah State Line	0.00	Fish Haven Creek	2.58	Numerous driveway traffic conflicts.	O	x		2	Open house	Driveway spacing does not meet ITD's 300-foot spacing standard.
7	Utah State Line	0.00	Fish Haven Creek	2.58	Too many driveway traffic conflicts. Need to consolidate access points.	O	x		3	Stakeholder interviews	Driveway spacing does not meet ITD's 300-foot spacing standard. Several locations have potential for consolidation.
8	Utah State Line	0.00	Fish Haven Creek	2.58	Driveway approach grades too steep.	G	x		3	Stakeholder interviews	Several driveways found that exceed public roadway approach grade standard (3%).
9	Utah State Line	0.00	Fish Haven N. Boundary	3.09	Major realignment or bypass needed in Fish Haven. Highway should be located to west up hill so there would be room to expand to 4 lanes. Need to preserve ROW now before more development occurs.	O	x	x	2	Stakeholder interviews, TF/TAC meeting	May be examined in improvement phase of study.
10	Utah State Line	0.00	Fish Haven N. Boundary	3.09	Bike lane needed in Fish Haven that connects to existing bike lane in Garden City.	B	x		4	Stakeholder interviews	Will be examined in improvement phase of study.
11	Utah State Line	0.00	Fish Haven N. Boundary	3.09	School children must wait for buses on highway and cross highway because local roads too steep for bus service.	S	x		1	Stakeholder interviews	Existing deficiency
12	Utah State Line	0.00	Fish Haven N. Boundary	3.09	Congestion will get worse.	O		x	3	Open house, stakeholder interviews, TF/TAC meeting	Will be analyzed in future conditions phase of study.
13	Utah State Line	0.00	Fish Haven N. Boundary	3.09	Is/will be need for scenic overlooks and pullouts.	O	x	x	4	Stakeholder interviews, TF/TAC meeting	Will be examined in improvement phase of study.
14	Utah State Line	0.00	Fish Haven N. Boundary	3.09	Will be need for more lake access parking.	O		x	1	Stakeholder interviews	Parked vehicles observed on shoulder and beach/lake bottom, exceeding capacity of existing off-street parking area.
15	Utah State Line	0.00	Fish Haven N. Boundary	3.09	Lower speed limits needed.	S	x		1	Stakeholder interviews	Speed limits need to be addressed outside of corridor planning process, starting with Regional Transportation Coalition.
16	Utah State Line	0.00	Fish Haven N. Boundary	3.09	Congestion in summer.	O	x		3	Stakeholder interviews	Level of service standards met for 30th-highest hour conditions for road segments and intersections in this area. Access spacing deficiencies found, however.
17	Utah State Line	0.00	Fish Haven N. Boundary	3.09	Center tun lane or passing lanes may be needed.	O	x		3	Stakeholder interviews	May be examined in improvement phase of study.
18	Utah State Line	0.00	Fish Haven N. Boundary	3.09	Designate Fish Haven area as no-passing zone.	O	x		3	Stakeholder interviews	No-passing zones are established based on passing sight distance deficiencies. No such deficiencies were identified for Fish Haven area.
19	Utah State Line	0.00	St. Charles	8.06	General traffic operations problems. Alternate route needed to west, with existing US 89 alignment used as frontage road.	O	x	x	2	Open house	May be examined in improvement phase of study.
20	Utah State Line	0.00	St. Charles	8.06	Deficient shoulder widths	G	x		2	ITD staff, county staff	Shoulder width deficiencies identified between m.p. 0.0 (Utah state line) and m.p. 6.83 (south of St. Charles)

Table A-1
US 89 Reported Roadway Deficiencies

Deficiency No.	From/At	M.P.	To	M.P.	Reported Deficiency						
					Description	Type*	Time Frame		Frequency	Source	Findings/Status
							Existing	Future			
21	Utah State Line	0.00	St. Charles	8.06	Sight distance from highway poor at certain locations.	G	x		1	City of Montpelier staff	Measured intersection and stopping sight distances meet standard at each surveyed location.
22	Utah State Line	0.00	North Beach Rd.	8.74	Bike/vehicle conflicts - need bike lane.	B	x		3	Open house, TF/TAC meeting, county staff	Will be examined in improvement phase of study.
23	Lake West Blvd.	0.14		0.00	Poor sight distance	G	x		1	County staff	Measured intersection and stopping sight distances meet standards at this location.
24	Lake West Blvd.	0.14	Fish Haven Canyon Rd.	2.72	Congestion	O	x		2	Open house	Level of service standards met for 30th-highest hour conditions for segments and intersections. Access spacing deficiencies found, however.
25	Lake West Blvd.	0.14	Fish Haven Canyon Rd.	2.72	Poor sight distance from intersections and driveways.	G	x		2	Open house	Measured intersection sight distances meet standard at all surveyed public intersections. Vegetation could create obstructions on some private driveway approaches, however.
26	Lake West Blvd.	0.14	Fish Haven Canyon Rd.	2.72	Center turn lane or turn lanes at intersections needed.	O	x		3	Open house, TF/TAC meeting	Intersection turn lane deficiencies identified within this section at Lake West Blvd., Loveland Ln., and Fish Haven Canyon Rd. Center turn lane may be examined in improvement phase of study.
27	Lake West Blvd.	0.14	Fish Haven Canyon Rd.	2.72	Lower speed limits needed.	S	x		1	TF/TAC meeting	Speed limits need to be addressed outside of corridor planning process, starting with Regional Transportation Coalition.
28	Bear Lake West Beach	0.72		0.00	Parking along shoulders near beach.	O	x		2	Open house	Parked vehicles observed on shoulder as well as beach/lake bottom.
29	Bear Lake West Beach	0.72		0.00	Beach has no parking area.	O	x		1	Stakeholder interviews	Private unpaved parking area is available for less than 20 vehicles, but no other off-street parking is provided.
30	Lakeside Dr.	1.17		0.00	Poor sight distance	G	x		1	County staff	Measured intersection and stopping sight distances meet standards at this location.
31	Loveland Lane	2.02		0.00	Poor sight distance	G	x		1	County staff	Measured intersection and stopping sight distances meet standards at this location.
32	S. of Fish Haven Creek	2.46	N. of Fish Haven Creek	2.59	Inadequate horizontal curve.	G	x		1	ITD staff	No deficiency identified based on ITD HPMS data and field survey.
33	Fish Haven Creek	2.58		0.00	Bridge too narrow with no shoulder for bicyclists and pedestrians. Walkway or bike lane would be big improvement.	B, P	x		1	TF/TAC meeting	Bridge width meets ITD standard.
34	Fish Haven Canyon Rd.	2.72		0.00	Poor sight distance due to parked vehicles north and south of intersection.	G	x		4	Open house, stakeholder interviews, county staff	Parked vehicles north and south of intersection can create intersection sight distance problems. Without parked vehicles, measured intersection sight distance meets standard.
35	Fish Haven N. Boundary	3.09	Fish Haven Cemetery Rd.	3.40	Reduce existing 65 mph speed limit to 45 mph to provide transition to 35 mph speed zone in Fish Haven.	S	x		1	Stakeholder interviews	Speed limits need to be addressed outside of corridor planning process, starting with Regional Transportation Coalition.
36	Fish Haven N. Boundary	3.09	N. of 3rd South St. (St. Charles)	7.62	May need to lower existing 65 mph speed limit in future due to increase in traffic accessing US 89	S		x	1	Open house	Will need to be addressed in future.

Table A-1
US 89 Reported Roadway Deficiencies

Deficiency No.	From/At	M.P.	To	M.P.	Reported Deficiency						
					Description	Type*	Time Frame		Frequency	Source	Findings/Status
							Existing	Future			
37	Fish Haven Cemetery Rd.	3.40		0.00	Scenic pull-off needed in this area.	O	x		1	Open house	Will be examined in improvement phase of study.
38	Fish Haven Cemetery Rd.	3.40		0.00	Poor sight distance	G	x		1	County staff	Measured intersection and stopping sight distances meet standards at this location.
39	S. of St. Charles	7.00	N. of 3rd South St. (St. Charles)	7.62	Existing 65 mph speed limit too high due to residential development.	S	x		3	Open house	Speed limits need to be addressed outside of corridor planning process, starting with Regional Transportation Coalition.
40	1st North St. (St. Charles)	8.06	North Beach Rd.	8.74	Existing 55 mph speed limit too high due to number of driveways and turning vehicles at North Beach Rd. Reduce speed limit to 45 mph.	S	x		3	Open house	Speed limits need to be addressed outside of corridor planning process, starting with Regional Transportation Coalition.
41	1st North St. (St. Charles)	8.06	Ovid Corner (US 89 Connector)	20.15	Conflicts between general traffic and cattle and farm equipment.	O	x		2	TF/TAC meeting, county staff	Existing deficiency
42	North Beach Rd.	8.74		0.00	Conflicts between vehicles slowing to turn onto N. Beach Rd. and faster-moving through vehicles (NB right-turn lane needed). Proposed food mart/rental shop will add to problem.	O	x		2	Open house	Turn lane deficiency identified at this location.
43	North Beach Rd.	8.74		0.00	One-half mile back-ups on WB N. Beach Rd. in summer. Need to add WB left-turn lane.	C	x		2	Open house	Turn lane deficiency identified at this location.
44	North Beach Rd.	8.74		0.00	Poor sight distance from EB approach to north.	G	x		5	Open house, ITD staff	Measured intersection and stopping sight distances meet standards at this location.
45	North Beach Rd.	8.74		0.00	Existing 55 mph speed limit too high because of congested conditions at intersection.	S	x		1	County staff	Speed limits need to be addressed outside of corridor planning process, starting with Regional Transportation Coalition.
46	North Beach Rd.	8.74	Minnetonka Cave Rd.	8.93	Significant traffic volumes between North Beach area and Minnetonka Cave along this segment, with many vehicles towing boats and camp trailers. SB left-turn lane needed at North Beach Rd. and NB left-turn lane needed at Minnetonka Cave Rd. Speed limit too high. Poor sight distances.	S	x		5	Stakeholder interviews, county staff	Left-turn lane deficiencies identified at North Beach Rd. and Minnetonka Cave Rd. intersections. Speed limits need to be addressed outside of corridor planning process, starting with Regional Transportation Coalition. Measured intersection and stopping sight distances meet standards at these locations.
47	North Beach Rd.	8.74	2nd South St. (Paris)	15.64	Need bike lane.	B	x		1	Open house	Will be examined in improvement phase of study.
48	Minnetonka Cave Rd.	8.93	Bloomington S. City Limit	12.83	Existing 65 mph speed limit too high.	S	x		1	County staff	Speed limits need to be addressed outside of corridor planning process, starting with Regional Transportation Coalition.
49	Worm Creek Rd.	11.69		0.00	Conflicts between trucks accessing gravel pit and general traffic.	O	x		1	Stakeholder interviews	Will be examined in improvement phase of study.
50	Worm Creek Rd.	11.69		0.00	Fatal bike accident in this area.	S	x		1	County staff	Bike lane for this area will be examined in improvement phase of study.
51	Bloomington N. City Limit	14.04	Paris S. City Limit	14.95	Narrow shoulder widths.	G	x		1	ITD staff	No shoulder width deficiencies were identified within this section.
52	Paris Cemetery Rd.	14.95	2nd South St.	15.64	Existing 65 mph speed limit too high due to numerous driveways and residential development. Reduce speed limit to 45 mph.	S	x		2	Open house	Speed limits need to be addressed outside of corridor planning process, starting with Regional Transportation Coalition.

Table A-1
US 89 Reported Roadway Deficiencies

Deficiency No.	From/At	M.P.	To	M.P.	Reported Deficiency						
					Description	Type*	Time Frame		Frequency	Source	Findings/Status
							Existing	Future			
53	Paris Cemetery Rd.	14.95	Lanark Rd.	18.31	Reduce existing speed limits.	S	x		2	Open house	Speed limits need to be addressed outside of corridor planning process, starting with Regional Transportation Coalition.
54	1st South St. (Paris)	15.79	1st North St. (Paris)	16.09	Existing 25 mph speed limit through middle of Paris may be too slow.	O	x		1	Open house	Speed limits need to be addressed outside of corridor planning process, starting with Regional Transportation Coalition.
55	2nd North St. (Paris)	16.23	Paris N. City Limit	16.95	Existing 65 mph speed limit too high due to numerous driveways, residential development, school bus stops, children in area. Reduce speed limit to 45 mph.	S	x		4	Open house	Speed limits need to be addressed outside of corridor planning process, starting with Regional Transportation Coalition.
56	2nd North. St. (Paris)	16.23	Lanark Rd.	18.31	Conflicts between farm vehicles and general traffic	O	x		1	County staff	Existing deficiency
57	2nd North. St. (Paris)	16.23	Ovid Corner (US 89 Connector)	20.15	Conflicts between farm and non-farm vehicles in this area. May need to lower existing speed limit or provide frontage roads.	S	x		2	Open house	Existing deficiency
58	2nd North. St. (Paris)	16.23	Ovid Corner (US 89 Connector)	20.15	Narrow shoulder widths.	G	x		3	Open house	Shoulder width deficiencies identified between m.p. 18.31 (Lanark Rd.) and m.p. 20.15 (Ovid Corner - US 89 connector.)
59	2nd North. St. (Paris)	16.23	Ovid Corner (US 89 Connector)	20.15	Weather-related driving problems in winter (blowing snow, low visibility, snow drifts on road).	O	x		6	Open house, stakeholder interviews, TF/TAC meeting	Existing deficiency
60	2nd North. St. (Paris)	16.23	Ovid Corner (US 89 Connector)	20.15	Sight distance problems at certain locations.	G	x		4	Stakeholder interviews	Intersection and stopping sight deficiencies found at Wallentine Road and Church Farm Road.
61	2nd North. St. (Paris)	16.23	Ovid Corner (US 89 Connector)	20.15	Bus pullouts needed at school bus stops due to high existing speed limit (65 mph).	S	x		1	Stakeholder interviews	Existing deficiency
62	2nd North St. (Paris)	16.23	Bear River Canal Bridge	22.61	Narrow roadway, no shoulders for pull-off. If shoulders can't be widened, then may need to lower speed limit.	G	x		4	Open house	Shoulder width deficiencies identified between m.p. 18.31 (Lanark Rd.) and m.p. 22.45 (Cutler Lane).
63	N. of Paris	17.17	Ovid Creek Bridge (S.)	19.84	Narrow shoulder widths.	G	x		1	ITD staff	Shoulder width deficiencies identified between m.p. 18.31 (Lanark Rd.) and m.p. 19.84 (Ovid Creek Bridge - S.)
64	Church Farm Rd.	17.61	Lanark Rd.	18.31	Narrow roadway	G	x		4	Open house	No lane or shoulder width deficiencies identified within this section.
65	Church Farm Rd.	17.61	Lanark Rd.	18.31	Vertical curves limit sight distance to/from US 89 (e.g., Wallentine Rd. and recent fatal accident at Church Farm Rd.).	S	x		5	Open house, stakeholder interviews	Intersection and stopping sight deficiencies found at Wallentine Road and Church Farm Road.
66	Lanark Rd.	18.31		0.00	Sight distance problems for NB vehicles.	G	x		4	Stakeholder interviews, county staff	Measured intersection and stopping sight distances meet standards at this location. Northbound drivers have difficulty seeing oncoming southbound vehicles when trying to turn left onto Lanark Rd., however.
67	Ovid Creek Bridge (S.)	19.84		0.00	Bridge is too narrow (needs to be as wide as approach roadway widths).	G	x		1	ITD staff	Bridge width deficiency identified.
68	Ovid Corner (US 89 Connector)	20.15	SH 36	20.23	Safety problem due to poor intersection configuration.	S	x		10	Open house	Intersection configuration is inadequate, although it is not classified as high-accident location (HAL) by ITD. Also, collision rate is 0.39 collisions per million entering vehicles which is below statewide average of 1.13 for similar locations.

Table A-1
US 89 Reported Roadway Deficiencies

Deficiency No.	From/At	M.P.	To	M.P.	Reported Deficiency						
					Description	Type*	Time Frame		Frequency	Source	Findings/Status
							Existing	Future			
69	Ovid Corner (US 89 Connector)	20.15	SH 36	20.23	Combine two existing intersections into one.	S	x		2	Open house	Will be examined in improvement phase of study.
70	Ovid Corner (US 89 Connector)	20.15	SH 36	20.23	Conflicts between trucks accessing/egressing lumber company on east side of US 89 (20-30 trucks per day in summer) and general traffic on US 89.	O	x		2	Open house	Mitigation measures will be examined in improvement phase of study.
71	Ovid Corner (US 89 Connector)	20.15	SH 36	20.23	Speeds too fast around curve.	S	x		2	Open house	Speeds appear reasonable based on field survey.
72	Ovid Corner (US 89 Connector)	20.15	SH 36	20.23	Driver confusion, especially with visitors to area. Realignment is necessary.	O	x		17	Stakeholder interviews	Will be examined in improvement phase of study.
73	Ovid Corner (US 89 Connector)	20.15	SH 36	20.23	Flasher needed on US 89 to warn drivers.	S	x		1	TF/TAC meeting	Will be examined in improvement phase of study.
74	Ovid Corner (US 89 Connector)	20.15	SH 36	20.23	Log piles next to highway at lumber mill can cause poor sight distance around curve.	O	x		1	County staff	Intersection sight distance deficiency identified.
75	Ovid Corner (US 89 Connector)	20.15	SH 36	20.23	Fatal accident caused by poor curvature. Needs to be realigned.	S	x		1	County staff	Will be examined in improvement phase of study.
76	SH 36	20.23		0.00	Lack of driver awareness of stop sign on EB approach of SH 36 intersection. Many drivers run through stop sign.	O	x		19	Open house, stakeholder interviews	Mitigation measures will be examined in improvement phase of study.
77	SH 36	20.23		0.00	Poor sight distance.	G	x		2	ITD staff, City of Montpelier staff	Intersection sight distance deficiency identified.
78	SH 36	20.23		0.00	Driver confusion between EB and SB vehicles. EB drivers not sure if SB vehicles will turn to continue along US 89 or go straight to access WB SH 36.	O	x		1	ITD staff	Mitigation measures will be examined in improvement phase of study.
79	Ovid Corner (SH 36 Intersection)	20.23	Bear River Canal Bridge	22.61	Narrow shoulder widths.	G	x		3	Stakeholder interviews, ITD staff, City of Montpelier staff	Shoulder width deficiencies identified between m.p. 20.23 (Ovid Corner - SH 36 intersection) and m.p. 22.45 (Cutler Lane).
80	Ovid Corner (SH 36 Intersection)	20.23	W. of Montpelier	24.26	Numerous access points to farm fields which can create conflicts with farm equipment entering/exiting the highway.	O	x		1	Stakeholder interviews	Existing deficiency
81	Ovid Corner (SH 36 Intersection)	20.23	W. of Montpelier	24.26	Need wider travel lanes and shoulders.	G	x		1	Stakeholder interviews	No lane width deficiencies identified within this section. Shoulder width deficiencies identified between m.p. 20.23 (Ovid Corner - SH 36 intersection) and m.p. 22.45 (Cutler Lane).
82	Ovid Creek Bridge (E.)	20.40		0.00	Bridge too narrow (needs to be as wide as approach roadway width).	G	x		1	ITD staff	Bridge width deficiency identified.
83	Walton Feed Co.	24.22	W. of Montpelier	24.80	Existing 65 mph speed limit too high due to conflicts with vehicles turning into/out of driveways.	S	x		1	Open house	Speed limits need to be addressed outside of corridor planning process, starting with Regional Transportation Coalition.
84	Begin 12th St. Overpass (Montpelier)	25.14	End 12th St. Overpass	25.29	Overpass too narrow.	G	x		1	TF/TAC meeting	No existing deficiency identified based on ITD standard.
85	Begin 12th St. Overpass (Montpelier)	25.14	End 12th St. Overpass	25.29	Overpass is only access to Montpelier to/from south.	C	x		1	TF/TAC meeting	Montpelier also served by US 30 to/from south, although this connection not as direct.
86	Begin 12th St. Overpass (Montpelier)	25.14	9th St. (Montpelier)	25.41	Not enough driver awareness of lower speed limit (25 mph) in Montpelier. More speed limit enforcement needed.	S	x		1	Open house	Speeds reasonable based on speed survey data for this location (27.3 mph avg. speed).

Table A-1
US 89 Reported Roadway Deficiencies

Deficiency No.	From/At	M.P.	To	M.P.	Reported Deficiency						
					Description	Type*	Time Frame		Frequency	Source	Findings/Status
							Existing	Future			
87	8th St. (Montpelier)	25.52		0.00	Signal detection loop on SB approach of 8th St. too close to centerline so that signal gets actuated by vehicles turning from Washington St. onto 8th St. Green time for 8th St. also needs to be lengthened by a few seconds.	O	x		1	Open house	Level of service "A" calculated for this location.
88	4th St. (Montpelier)	25.98	Clay St.	26.28	Truck speeds too high.	S	x		1	ITD staff	Speed data unavailable for this location.
89	Clay St. (Montpelier)	26.28		0.00	Accidents due to WB vehicles on US 89 not stopping at stop sign. Signal needed.	S	x		3	Open house, ITD staff, City of Montpelier staff	Mitigation measures will be examined in improvement phase of study.
					Speeds too high.	S	x		1	Open house	Speed limits need to be addressed outside of corridor planning process, starting with Regional Transportation Coalition.
					Wider lanes and shoulders will be needed along entire corridor to accommodate more long-distance bicyclists.	B		x	1	Stakeholder interviews	Will be examined in improvement phase of study.
					Passing lanes will be needed.	C		x	1	Stakeholder interviews	May be examined in improvement phase of study.
					Vertical curves at some locations obstruct sight distance.	G	x		1	Open house	Findings for specific locations provided above.
					Some bridges are too narrow.	G	x		1	Stakeholder interviews	Findings for specific locations provided above.
					Narrow shoulder widths	G	x		1	County staff	Findings for specific locations provided above.
					Intersection approaches of county roads with US 89 too steep.	G	x		1	Stakeholder interviews	Approach grade deficiency was identified at Lake West Blvd. intersection.
					Conflicts between slow-moving vehicles pulling onto/off of highway and faster through traffic.	O	x		1	Open house	Existing deficiency
					Highway too narrow. Should be 4 lanes wide.	O	x			Stakeholder interviews	May be examined in improvement phase of study.
					Will be increased truck traffic with completion of Logan Canyon improvements.	O	x		1	Stakeholder interviews	Will need to be addressed in future.
					Limited opportunities for farm equipment to use highway due to conflicts with general traffic	O	x		1	Stakeholder interviews	Will be examined in improvement phase of study.
					Will be more conflicts between local and through traffic in future.	O		x	1	Stakeholder interviews	Mitigation measures will be examined in improvement phase of study.
					Driveway access to the highway will need to be limited. Use side streets or frontage roads instead.	O		x	1	Stakeholder interviews	Will be examined in improvement phase of study.
					Too much speed limit variation along corridor.	O	x		1	County staff	Speed limits need to be addressed outside of corridor planning process, starting with Regional Transportation Coalition.
					Seventeen bus stops in 65 mph speed zones.	S	x		1	Stakeholder interviews	Existing deficiency
					Better transitions needed for new 65 mph speed limits near communities.	S	x		1	Stakeholder interviews	Speed limits need to be addressed outside of corridor planning process, starting with Regional Transportation Coalition.
					Increased speeds and traffic volumes have increased road kill.	S	x		1	TF/TAC meeting	Mitigation measures will be examined in improvement phase of study.
					Problem with speed limit increase from 55 mph to 65 mph due to lack of transition areas from higher speed zones to lower speed zones within communities.	S	x		1	Stakeholder interviews	Speed limits need to be addressed outside of corridor planning process, starting with Regional Transportation Coalition.

* C = Capacity, G = Geometric, O = Traffic Operations, S = Safety, B = Bike, P = Pedestrian

Appendix B

LEVEL OF SERVICE ANALYSIS PARAMETERS AND INPUT DATA

Table B-1
Two-Lane Highways (Rural Undeveloped Areas)
HCM 2000 Methodology

CORRIDOR-WIDE PARAMETERS

Parameter	Value	Source
Highway class	I	Per *HCM 2000* definition
Lane width	12 feet	Field survey
Terrain	Level	Field survey

SEGMENT DATA ITEMS*

Segment				Input Data								
From	**From M.P.**	**To**	**To M.P.**	**Shoulder Width**	**2002 DHV**	**2025 DHV**	**Dir. Split**	**PHF**	**% Trucks, Buses**	**% RVs**	**% No-Passing**	**Free-Flow Speed**
Fish Haven n. boundary	3.09	St. Charles s. city limit	7.0	2’	331	N/A**	52/48	.90	0%	9%	15%	59.8 mph
300 North St. (St. Charles)	8.35	Bloomington Creek bridge	12.91	5’	341	N/A**	55/45	.85	1%	7%	8%	59.8 mph
Bloomington n. city limit	13.9	Paris s. city limit	14.95	4’	374	435	37/63	.94	1%	12%	0%	59.8 mph
E. 2nd North St. (Paris)	16.25	Lanark Rd.	18.31	1’	378	438	52/48	.84	0%	8%	12%	59.8 mph
Lanark Rd.	18.31	Ovid corner	20.23	1’	411	477	50/50	.70	0%	8%	54%	59.8 mph
Ovid corner	20.23	12th St. overpass (Montpelier)	25.14	2’	380	441	53/47	.88	2%	8%	11%	59.8 mph

* Sources:

1. All volume-related data items except 2025 DHV otained from traffic counts (2025 DHV obtained from study traffic forecast).
2. All geometric data items (shoulder width and % no-passing zones) obtained through field survey.
3. Free flow speed obtained through speed survey.

** Segment analyzed using HIGHPLAN methodology for 2025 (see Table B-2).

Note: All parameter and input data values the same for 2025 as 2002 except DHV.

Table B-2
Two-Lane Highways (Rural Developed Areas)
HIGHPLAN Methodology

CORRIDOR-WIDE PARAMETERS

Parameter	Value	Source
Area type	Rural developed	Per HIGHPLAN definition
Terrain	Level	Field survey
Base capacity	1,700 vph	HIGHPLAN default
Local adj. factor	.92	HIGHPLAN default

SEGMENT DATA ITEMS*

Segment				Input Data						
From	From M.P.	To	To M.P.	Posted Speed	2002 DDHV	2025 DDHV	PHF	% Heavy Vehicles	% No-Passing	Number of Lanes
Northbound										
Idaho-Utah state line	0.00	Fish Haven	2.42	50 mph	222	468	.81	9%	52%	1
Fish Haven	2.42	Fish Haven n. boundary	3.09	35 mph	182	435	.81	7%	19%	1
Fish Haven n. boundary	3.09	St. Charles s. city limit	7.0	65 mph	N/A**	406	.90	9%	15%	1
St. Charles s. city limit	7.0	300 North St. (St. Charles)***	8.35	45 mph	172	362	.75	9%	0%	1
Bloomington Creek bridge	12.91	Bloomington n. city limit	13.9	45 mph	233	270	.75	8%	0%	1
Paris s. city limit	14.95	E. 2nd South St. (Paris)	15.65	65mph	137	159	.80	15%	0%	1
E. 2nd South St. (Paris)	15.65	E. 2nd North St. (Paris)	16.25	25 mph	173	200	.85	10%	N/A	2
Southbound										
E. 2nd North St. (Paris)	16.25	E. 2nd South St. (Paris)	15.65	25 mph	208	241	.78	12%	N/A	2

Table B-2 (cont.)
Two-Lane Highways (Rural Developed Areas)
HIGHPLAN Methodology

Segment				Input Data						
From	**From M.P.**	**To**	**To M.P.**	**Posted Speed**	**2002 DDHV**	**2025 DDHV**	**PHF**	**% Heavy Vehicles**	**% No-Passing**	**Number of Lanes**
Southbound										
E. 2nd South St. (Paris)	15.65	Paris s. city limit	14.95	65mph	237	275	.86	12%	0%	1
Bloomington n. city limit	13.9	Bloomington Creek bridge	12.91	45 mph	170	197	.79	6%	0%	1
300 North St. (St. Charles)***	8.35	St. Charles s. city limit	7.0	45 mph	192	364	.75	8%	0%	1
St. Charles s. city limit	7.0	Fish Haven n. boundary	3.09	65 mph	N/A**	404	.90	9%	15%	1
Fish Haven n. boundary	3.09	Fish Haven	2.42	35 mph	160	476	.80	7%	24%	1
Fish Haven	2.42	Idaho-Utah state line	0.00	50 mph	209	514	.86	9%	52%	1

* Sources:

1. All volume-related data items except 2025 DDHV otained from traffic counts (2025 DDHV obtained from study traffic forecast).
2. All geometric data items (% no-passing zones and number of lanes) and posted speed obtained through field survey.

** Analyzed using *HCM 2000* two-lane highway methodology for 2002.
*** Segment endpoint at North Beach Rd. (m.p. 8.74) for 2025.

Note: All parameter and input data values the same for 2025 as 2002 except DDHV.

Table B-3
Urban Streets
HCM 2000 Methodology

CORRIDOR-WIDE PARAMETERS

Parameter	Value	Source
Urban street class	III	Per *HCM 2000* definition

SEGMENT DATA ITEMS

Segment				Input Data				
From	From M.P.	To	To M.P.	Length	Free-Flow Speed		Intersection Control Delay*	
					Data Value	Source	Data Values (2002/2025)	Source
Eastbound								
Washington St./ 12th St.	25.29	Washington St./ 8th St.	25.52	0.23	27.1 mph	Speed survey	7.8/7.2 s	Intersection LOS analysis for Washington St./8th St.
Washington St./ 8th St.	25.52	Washington St./ 4th St.	25.98	0.46	27.1 mph	Speed survey	68.9/19.2 s	Intersection LOS analysis for Washington St./ 4th St.
Washington St./ 4th St.	25.98	East city limit	27.17	1.19	35 mph	Posted speed	0.0/0.0 s	N/A
Westbound								
East city limit	27.17	4th St./Clay St.	26.28	0.89	35 mph	Posted speed	22.8/204.6 s	Intersection LOS analysis for 4th St./Clay St.
4th St./Clay St.	26.28	Washington St./ 4th St.	25.98	0.30	35 mph	Posted speed	0.0/17.7 s	Intersection LOS analysis for Washington St./ 4th St. (2025)
Washington St./ 4th St.	25.98	Washington St./ 8th St.	25.52	0.46	25.1 mph	Speed survey	7.6/7.1 s	Intersection LOS analysis for Washington St./8th St.
Washington St./ 8th St.	25.52	Washington St./ 12th St.	25.29	0.23	25.1 mph	Speed survey	0.0/0.0 s	N/A

* Intersection control delays calculated using *HCM 2000* LOS capacity analysis methodologies for signalized and unsignalized intersections (see Tables B-4 and B-5).

Table B-4
Signalized Intersections
HCM 2000 Methodology

CORRIDOR-WIDE PARAMETERS

Parameter	Value	Source
Lane width	12 feet	*HCM 2000* default
Arrival type	3	*HCM 2000* default
Multi-lane adj. factor	Yes	*HCM 2000* default
Saturation flow rate	1,900 vph	*HCM 2000* default
Crosswalk width	8 feet	*HCM 2000* default
Walking speed	4.0 ft./sec.	*HCM 2000* default

INTERSECTION DATA ITEMS

Input Data	Washington St./8th St.		Washington St./4th St.*	
	Data Value	Source	Data Value	Source
2002 DHV	Varies by movement	Traffic count	N/A	N/A
2025 DHV	Varies by movement	Study traffic forecast	Varies by movement	Study traffic forecast
Pedestrian volume (major/minor)	10/9	Traffic count	0/0	Traffic count
Bicycle volume (major/minor)	0/0	Traffic count	0/0	Traffic count
Phasing type (major/minor)	Permitted/permitted	Field survey	Protected/permitted	ITD signal plan
Cycle length	60 secs.	Field survey	60 secs.	ITD signal plan
Lost time	8 secs.	Field survey	12 secs.	Per signal phasing
Yellow + all-red time	4 secs.	Field survey	4 secs.	*HCM 2000* default
Heavy vehicle % (major/minor)	7/2	Traffic count	14/6	Traffic count
Grade % (major/minor)	0/0	Field survey	0/0	Field survey
On-street parking	None	Field survey	None	Field survey
Bus stops/hour	None	Field survey	None	Field survey

* Analyzed as signalized intersection for 2025 only

Note: All parameter and input data values the same for 2025 as 2002 except DHV.

Table B-5
Unsignalized Intersections
HCM 2000 Methodology

CORRIDOR-WIDE PARAMETERS

Parameter	Value	Source
Lane width	12 feet	*HCM 2000* default
Walking speed	4.0 ft./sec.	*HCM 2000* default

INTERSECTION DATA ITEMS*

Major Leg	Minor Leg	DHV	Pedestrian Volume (Major/Minor)	Median Type	Heavy Vehicle % (Major/Minor)	Grade (Major/Minor)	Flared Lane Space (vehs.)
US 89	Lake West Blvd.	Varies by movement	1/1	Undivided	13/6	0/0	0
US 89	Lakeside Dr.	Varies by movement	1/0	Undivided	8/0	0/0	0
US 89	Loveland Ln.	Varies by movement	0/0	Undivided	8/12	0/0	0
US 89	Fish Haven Canyon Rd.	Varies by movement	40/3	Undivided	7/2	0/0	0
US 89	Fish Haven Cem. Rd.	Varies by movement	0/0	Undivided	10/11	0/0	0
US 89	North Beach Rd.	Varies by movement	0/0	Undivided	8/10	0/0	0
US 89	Minnetonka Cave Rd.	Varies by movement	0/0	Undivided	8/7	0/0	0
US 89	Bloomington Canyon Rd.	Varies by movement	0/0	Undivided	8/0	0/0	0
US 89	2nd North St.(Paris)	Varies by movement	0/0	Undivided	12/6	0/0	0
US 89	Lanark Rd.	Varies by movement	0/0	Undivided	8/6	0/0	0
US 89	US 89 conn. to SH 36	Varies by movement	0/0	Undivided	7/80	0/0	0
US 89	SH 36 (north)	Varies by movement	0/0	Undivided	6/40	0/0	0
US 89	Bern Rd.	Varies by movement	0/0	Undivided	10/30	0/0	0
4th St.	Washington St.	Varies by movement	2/7	Undivided	14/6	0/0	0
4th St.	Clay St.	Varies by movement	0/0	Undivided	10/3	0/0	0

Sources:

1. All volume-related data items (DHV, pedestrian volumes, and heavy vehicle percentages) obtained from traffic counts.
2. All geometric data items (median type, grade, flared lane space) obtained through field survey.

Note: All parameter and input data values the same for 2025 as 2002 except DHV.

Appendix C

DEFINITIONS

Percent time-spent-following - The average percent of total travel time that vehicles must travel in platoons behind slower vehicles due to inability to pass on a two-lane highway.[53] This measure represents the freedom to maneuver and the comfort and convenience of travel. Efficient mobility is the principal function of major two-lane highways that connect major traffic generators or that serve as primary links in the state and national highway networks. These routes tend to serve long-distance commercial and recreational travelers, and long sections may pass through rural areas without traffic-control interruptions. Consistent high-speed operations and infrequent passing delays are desirable for these facilities.

Accidents per 100 million vehicle miles traveled – The number of accidents occurring along a roadway segment for every 100 million vehicle miles traveled along that segment, calculated as:

$$\text{Accidents/100 MVMT} = \frac{\text{Annual No. of Accidents}}{\text{AADT} * 365 * \text{Segment Length}} * 10^{(-8)}$$

It is used by ITD as the standard measure of accident frequency, so that accident conditions along a particular segment can be compared to those for similar roadways throughout the state in order to identify potential safety problems. (A multiplier of 100,000,000 is used within the formula above to reduce the number of post decimal digits in the resulting rate).

Turn lane warrants – Guidelines, in the form of volume thresholds, used to determine the need for turn lanes at intersections. The thresholds are various combinations through and turning traffic volumes, above which the installation of a turn lane may be considered. Warrants are only one of the factors that should be examined in making the final decision about the need for a turn lane. Other local factors, such as accident history, horizontal and vertical alignment, and highway functional class, should also be considered.

[53] Transportation Research Board, Highway Capacity Manual, Special Report 209 (Washington, D.C.: National Research Council, 2000).

Appendix D

TRAFFIC FORECASTING MODEL

Traffic Forecasting Model Development

Future growth rates in the Bear Lake area are expected to exceed the historical growth rates in the area. A large number of recreational housing units are planned around Bear Lake, including the Fish Haven area on the west shore, the Garden City area in Utah, and the east shore area. Therefore, to accurately forecast future traffic volumes in this area, a detailed traffic model was developed for the Bear Lake area (TAZs 1 – 27 in Figure 22 on page 49).

MODEL PROCESS AND STRUCTURE

The traffic model follows the basic steps of the standard traffic forecasting process shown in Figure D-1. The roadway network for the model area includes US 89 and the minor roads connecting with US 89 (e.g., Bear Lake West Blvd.). TAZs were defined as areas with roughly homogenous development that load traffic onto the network at the same general location(s). TAZ boundaries typically follow local roads, natural barriers such as creeks, or property lines.

Land use data for the Bear Lake area was developed based on information from the Bear Lake County Comprehensive Plan, census data, and Bear Lake County residential development approvals. The base year (2002) and 2025 land use data is shown by TAZ and land use type in Table D-1. The remaining steps in the modeling process are discussed within the sections below.

The traffic model incorporates three different vehicle trip types:

- Trips produced within the Bear Lake area - these are internal-internal (I-I) and internal-external (I-X) trips;
- Trips produced outside of Bear Lake area destined to one of the TAZs within the Bear Lake area – these are external-internal (X-I) trips; and
- Trips with an origin and destination outside of the Bear Lake area that pass through the area via US 89 – these are external-external (X-X) trips.

MODEL CALIBRATION

The proportionate share of total traffic volume for each trip type was calibrated within a base year version of the model using existing traffic count data and land use inventory data. The first component incorporated and tested in the model were the I-I and I-X trips produced by existing housing units. Information on these trip types was available from traffic counts conducted at several of the study intersections that provide access to

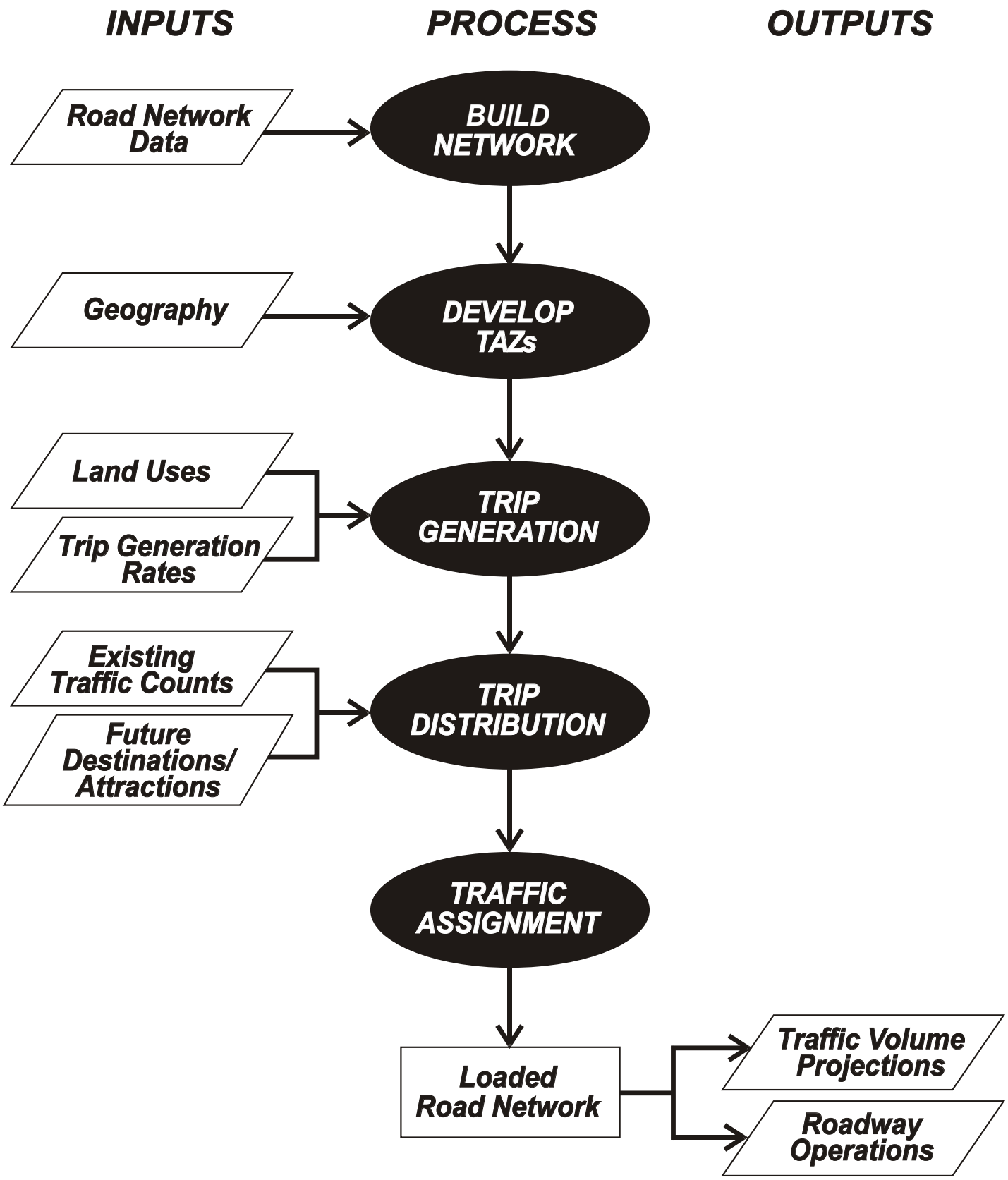

Figure D-1
TRAVEL FORECASTING PROCESS

Table D-1
Study Area Land Use Data

TAZ	2002			2025			Growth (2025-2002)		
	HHs	Retail Emp.	Other Emp.	HHs	Retail Emp.	Other Emp.	HHs	Retail Emp.	Other Emp.
1	128	10	5	318	20	20	190	10	15
2	11	0	0	41	0	0	30	0	0
3	50	0	0	55	0	0	5	0	0
4	24	0	0	34	0	0	10	0	0
5	46	0	0	236	0	20	190	0	20
6	20	0	0	40	20	0	20	20	0
7	19	0	0	29	0	0	10	0	0
8	44	5	5	84	5	5	40	0	0
9	58	0	0	158	20	5	100	20	5
10	15	0	0	45	0	0	30	0	0
11	65	0	0	255	40	20	190	40	20
12	2	0	0	5	0	0	3	0	0
13	7	0	0	120	0	0	113	0	0
14	8	0	0	13	0	0	5	0	0
15	5	0	0	55	0	0	50	0	0
16	0	0	0	10	0	0	10	0	0
17	12	0	0	22	0	0	10	0	0
18	7	0	0	7	0	0	0	0	0
19	5	0	0	10	0	0	5	0	0
20	10	0	0	15	0	0	5	0	0
21	106	10	5	116	20	15	10	10	10
22	22	0	0	32	0	0	10	0	0
23	11	0	0	15	0	0	4	0	0
24	4	10	0	4	25	0	0	15	0
25	1	0	0	1	0	0	0	0	0
26	6	0	0	73	25	0	67	25	0
27	110	0	0	227	0	20	117	0	20
28	111	0	0	116	5	15	5	5	15
29	279	0	0	298	30	75	19	30	75
30	0	0	0	32	0	25	32	0	25
31	0	0	0	0	0	0	0	0	0
32	1,035	0	0	1,059	80	100	24	80	100
Total	**2,221**	**35**	**15**	**3,525**	**290**	**320**	**1,304**	**255**	**305**

isolated residential developments. Examination of the traffic count data revealed that roughly 56% of these trips would distribute south to Utah. Approximately 10 % of the trips were found to distribute north of the Bear Lake area on US 89. The remaining (I-I) trips were destined for commercial or recreational locations within the Bear Lake area. The traffic count data and employment data were used to determine a weighted average distribution for these trips. The resulting distribution pattern for the I-I and I-X trips is listed in Table 12 on page 49.

The X-I trips destined to residential development were then added to the model using the same distribution developed for the I-X trips. Following this, X-I trips destined to recreational and retail areas within the Bear Lake area were distributed to reflect the turning movements at intersections such as North Beach Rd., Minnetonka Cave Rd., and Fish Haven Canyon Rd.

The last component added to the model was the X-X trips passing through the Bear Lake area via US-89. By definition, the origin and destination of these trips are the external stations along US 89 to the south and north of the modeling area.

The result was a base year trip distribution for each TAZ in the Bear Lake area, calibrated to local intersection turning movement counts. The following section discusses how each trip type was modeled for the development of the 2025 DHV traffic forecast.

Preparation of Traffic Forecasts

INTERNAL-INTERNAL AND INTERNAL-EXTERNAL TRIPS

Trip generation for I-I and I-X trips was estimated for each TAZ based on the number of future housing units and the appropriate trip rate from the *HCM2000*.[54] The recreational home trip rate category was determined to accurately represent the planned residential development surrounding Bear Lake, as described in the Bear Haven Resort Transportation Impact Study.[55] Trip rates for the recreational home category are shown in Table D-2 below:

Table D-2
ITE Recreational Home Trip Generation Rates

Land Use	Unit Type	Day	Mid-Day Peak	PM-Peak	Daily
Recreational Home (ITE Code 260)	Dwelling Units	Weekday	0.31	0.26	3.16
		Weekend	0.36	N/A	3.07

[54] Transportation Research Board.
[55] DKS Associates, Inc., Bear Haven Resort Transportation Impact Study, (2002).

Because the study design hour (30th highest hour) corresponds to weekend mid-day hour, the weekend mid-day peak trip rate of 0.36 trips per dwelling unit was used.

These trips were distributed according to the relative attractiveness of the other TAZs, as reflected by their level of recreational and retail activity and the number of housing units. The future year trip distribution was established by adjusting the base year distribution to reflect future changes in the relative attractiveness of the TAZs. The future year employment estimates in Table D-1, as well as the locations of new recreational areas, were used to develop the weighted average trip distribution for 2025 presented in Table 12 on page 49.

As can be seen in Table 12, there is shift in travel patterns from 2002 to 2025. The future development along US 89 from the Idaho-Utah state line to Minnetonka Cave Rd. will provide retail and recreational opportunities that currently exist outside of the area. Therefore, a portion of the trips generated within the Bear Lake area are expected to stay in the area. For example, shopping trips that today may be destined for Montpelier could, in the future, utilize future retail developments in St. Charles or Bear Haven, thus reducing the relative attractiveness of the Montpelier TAZ.

EXTERNAL-INTERNAL TRIPS

Trips originating outside of the Bear Lake area TAZs with destinations within the model network (X-I) consist of two components. First, trips destined to households were estimated using the same methodology described above for (I-X) trips originating from the households. Second, trips destined to retail or recreational areas were estimated based on historical traffic growth rates at the north and south ends of the corridor. Trips from the north were forecast using the same growth rate described earlier for the area north of Bear Lake (less than 1 percent per year). Trips from the south were forecast using a more recent growth rate (1995 to 2001) that captures the growth trend of traffic from Garden City and other Utah population centers (approximately 5 percent per year). As with the I-I and I-X trips, the distribution for the X-I trips was adjusted for the 2025 forecast to account for planned retail and recreational developments.

EXTERNAL-EXTERNAL TRIPS

Trips passing through the Bear Lake area on US 89 were forecast based on historical traffic growth rates. It was decided that the growth rate used for the area north of St. Charles (less than 1%) should be used for this component of the traffic stream, because it does not include traffic growth associated with the recent and planned development in the Bear Lake area. (Development-related traffic growth is already accounted for in the forecasts for the other trip types).

While the ultimate origin and destination of the X-X trips are the external stations along US 89 to the south and north of the modeling area, the future retail development located along US 89, particularly near Fish Haven, will attract some of this through traffic as pass-by trips. The traffic count data and projections from the Bear Haven Resort Transportation Impact Study[56] were used to assign a portion of these pass-by trips to the retail areas.

[56] DKS Associates, Inc., Bear Haven Resort Transportation Impact Study, (2002).

Appendix E

HOUSING AND EMPLOYMENT FORECASTING METHODOLOGY

WINTER BROOK
COMMUNITY RESOURCE PLANNING

MEMORANDUM

To: Bob Schulte, DKS Associates

From: Tom Armstrong, AICP

Date: January 7, 2003

Re: **US 89 Corridor Plan**
Future Year Forecast and Distribution

This memo describes the methodology and underlying assumptions that support the future year housing units and employment forecast and distribution for the US 89 Corridor Plan.

The future year is defined as 2025 in order to be consistent with the population projections in the Bear Lake County Comprehensive Plan.

Housing Units

The future housing unit forecast is based on recent building permit trends, as reported by the Bear Lake Regional Commission. Table 1 shows the building permit data distributed by geographic subarea.

Table 1. Building Permits for New Housing Units (1999-2001)

	1999	2000	2001	Avg
Fish Haven	7	6	4	5.66
Bear Lake West	35	27	32	31.33
Aspen Creek Estates	3	3	4	3.33
Bear Lake Ranches	0	3	0	1
Canyon Estates	0	0	3	1
Westside of Bear Lake				42.32
Eastside of Bear Lake	7	9	7	7.66
St. Charles	1	2	0	1
Paris	1	1	1	1
Lanark-Liberty	2	0	2	1.33
Montpelier	2	1	0	1
Other (outside corridor)	12	10	10	10.66
Total	**70**	**62**	**63**	**64.97**

Source: Bear Lake Regional Commission

Winterbrook Planning
310 SW Fourth Avenue, Suite 1000
Portland, OR 97204
503.827.4422 ▪ 503.827.4350 (fax)

The average number of new housing units per year was projected out for 25 years. This approach does not factor in any increase in the rate of growth due to increasing popularity/attractiveness of Bear Lake as a vacation destination. Nor does it factor in any economic slow down during that period. These two forces are expected to balance out over the forecast period.

The new housing units are divided into seasonal (vacation homes) and non-seasonal (permanent residents). Based on the Bear Lake County Comprehensive Plan, it is assumed that 85% of the westside and eastside Bear Lake units are seasonal units. A seasonal unit factor was assumed for the cities of St. Charles (40%) and Paris (15%), which is based on the proportions found in the 2000 Census.

Table 2. 2025 Forecast of New Housing Units in Bear Lake County

	Total	Non-Seasonal	Seasonal
Westside of Bear Lake	1058	159	899
Eastside of Bear Lake	192	29	163
St. Charles	25	15	10
Paris	25	21	4
Lanark-Liberty	33	33	0
Montpelier	25	25	0
Other (outside corridor)	267	267	0
Total	**1624**	**548**	**1076**

This forecast results in 1,407 new permanent residents in 2025, assuming a vacancy rate of 8.6% and 2.81 persons per household based on the 2000 Census.

For comparison purposes, this forecast was compared to other forecasts and a projection of the 1990-2000 growth rate (based on the 2000 Census). Table 3 shows this forecast falls within the range of other forecasts. The Bear Lake County Comprehensive Plan expects slower growth based on declining school enrollment. In assuming a higher growth rate, this forecasts provides a margin of error to help ensure that adequate transportation facilities are available, but it is not the highest rate of growth nor does it represent a buildout scenario.

Table 3. Bear Lake County Future Population Forecasts

Forecast	1990	2000	2025	Avg. Annual Growth Rate
Idaho Power		6,530	8,591	1.3%
Corridor Plan		6,411	7,818	0.9%
90-00 Growth Rate	6,084	6,411	*7,212*	0.5%
Woods & Poole		6,570	6,910	0.2%

Source: Bear Lake County Comprehensive Plan and 2000 Census

Distribution

For the purposes of forecasting future travel demand and transportation needs, the forecasted future growth was allocated or distributed throughout the corridor.

In the Fish Haven/Bear Lake area, new housing units will be distributed to existing platted subdivisions and the proposed Bear Haven subdivision. This distribution assumes 90 percent buildout of Bear Lake West. Another key assumption is the proposed Bear Haven subdivision will not be growth inducing, but will compete with the other developments and absorb units as Bear Lake West begins to buildout. This distribution assumes 75 percent buildout of the Bear Haven development.

For other parts of the County, new housing units will be allocated to geographic areas with as much specificity as possible.

Employment

The future employment forecast is based on the 1999 Employment Profile of Bear Lake County prepared by the US Bureau of Economic Analysis. This profile distributed the jobs into broad categories, as presented in Table 4.

Table 4. Bear Lake County Employment Profile (1999)

Sector	Jobs
Farm	600
Manufacturing	126
Construction	137
Transp./Utilities	100
Retail	564
FIRE	164
Services	Not Disclosed
Government	601
Total	**2,947**

Source: US Bureau of Economic Analysis

The employment sectors are consolidated into retail and non-retail categories. The housing unit totals are broken down into seasonal and non-seasonal categories based on the 2000 Census data and scaled back to 1999 based on building permit data. The employment totals are divided by the number of housing units to determine the number of jobs per housing unit for each category. The retail sector is based on the total number of housing units under the assumption that the seasonal units primarily provide support (customers) for the retail businesses. However, this is not to say that all of the "seasonal" retail jobs are part-time and directly tied to tourism. It also reflects that other permanent, full-time retail jobs (such as grocery clerks, gas station attendants, etc.) are supported by seasonal tourism.

The non-retail sector is based only on the non-seasonal housing units under the assumption that the seasonal units only provide marginal support for these businesses. These assumptions result in a faster rate of growth for the retail sector, due to the faster rate of growth for seasonal units in the housing forecast.

Table 5. 1999 Housing Units

Non-Seasonal	2,518
Seasonal	688
Total	**3,207**

Table 6. 1999 Employment per Housing Units

Sector	Jobs/Unit
Non-Retail	0.95
Retail	0.18

Table 7 presents the future employment forecast, which is based on the jobs per unit rates for each sector and the housing unit forecast from above. For retail employment, the number of jobs is broken out into separate non-seasonal and seasonal sectors.

Table 7. 2025 Future Employment

Sector	New Jobs	Total Jobs
Retail		
Non-Seasonal	104	547
Seasonal	200	321
Non-Retail	547	2,930
Total	**851**	**3,798**

Table 8 presents employment growth rates for 1990-1999 as well as for 2000-2025. In comparison, the future employment forecast is based on modest growth rates as compared to the 1990s.

Table 8. Employment Growth Rates

1990-99	1990	1999	Avg. Annual Growth Rate
Total	2,230	2,947	3.2%
Retail	447	564	2.6%
Non-Retail	1,783	2,383	3.4%
2000-25	**1999**	**2025**	
Total	2,947	3,798	1.2%
Retail	564	868	2.2%
Non-Retail	2,383	2,930	0.9%

Source: US Bureau of Economic Analysis

It is assumed that most of the retail jobs associated with the Seasonal housing units will be located in the Bear Lake area. The Non-Seasonal retail jobs and non-retail jobs will be distributed through out Bear Lake County.

Distribution

For the purposes of forecasting future travel demand and transportation needs, the forecasted future growth was allocated or distributed throughout the corridor.

The Type of Employment reported in the 2000 Census is used as a guide for allocating employment below the county level to local communities. This method may overestimate employment in some of the smaller communities because it may not adequately account for long distance commuting patterns.

Retail employment distribution is largely based on existing retail locations and future locations identified in the *Bear Lake County Comprehensive Plan 2025*. Table 9 includes additional assumptions for each location.

Table 9. Retail Employment Distribution

Location	Future Retail Employment	Assumption
Bear Lake West	10	Additional retail/services associated with buildout of development.
Fish Haven	20	Expansion of existing commercial businesses.
Bear Haven	40	New commercial development.
Eastshore	20	New commercial development tied to housing development.
St. Charles	25	Expansion of existing commercial businesses (North Beach Rd.)
Bloomington	5	Expansion of existing commercial businesses.
Paris	30	Expansion of existing commercial businesses.
Montpelier	80	Expansion of County's major commercial center.
Other Bear Lake County North US 30 South US 30 West HWY 36	 35 10 5	
Total	**305**	

Non-Retail employment is distributed based on existing locations and future locations identified in the *Bear Lake County Comprehensive Plan 2025*. Table 10 includes additional assumptions for each location.

Table 10. Non-Retail Employment Distribution

Location	Future Non-Retail Employment	Assumption
Westside of Bear Lake	60	Home occupations and telecommuting
Eastside of Bear Lake	20	Home occupations and telecommuting
St. Charles	10	Expansion of existing businesses
Bloomington	15	Expansion of existing businesses
Paris	75	Expansion of existing businesses plus one new major employer
Lanark-Liberty-Ovid	25	Expansion of existing businesses
Montpelier	100	Expansion of County's major commercial center
Other Bear Lake County		
North US 30	125	
South US 30	75	
West HWY 36	45	
Total	**550**	